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SAS

THE COMPLETE RECORD OF THE WORLD'S LEADING FIGHTING FORCE

ORBIS

Issue 1

SAS

THE COMPLETE RECORD OF THE WORLD'S LEADING FIGHTING FORCE

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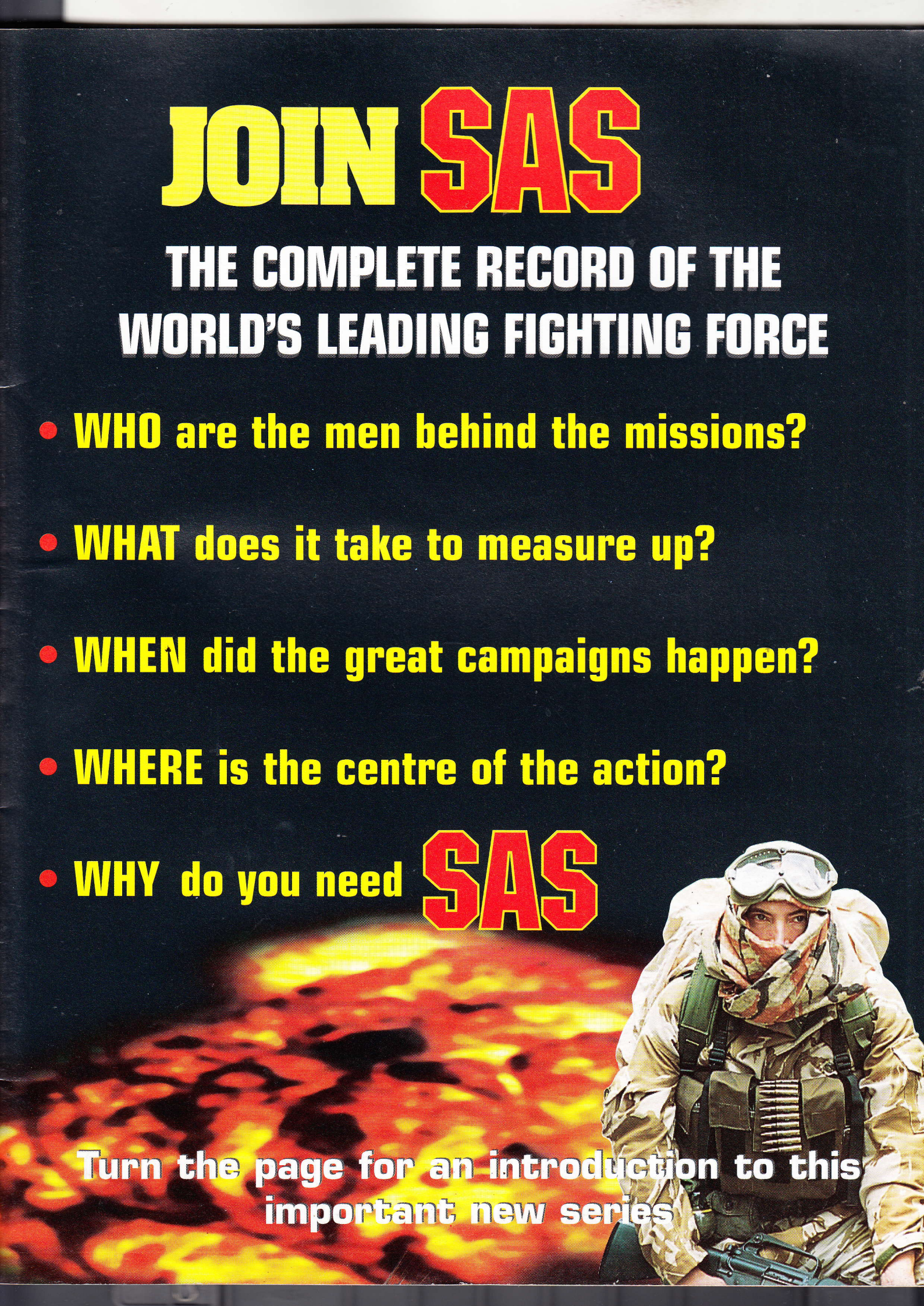

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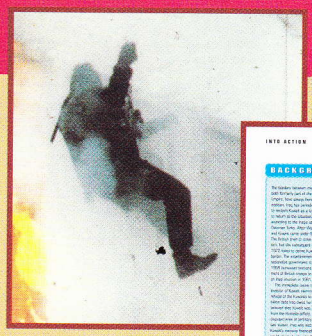

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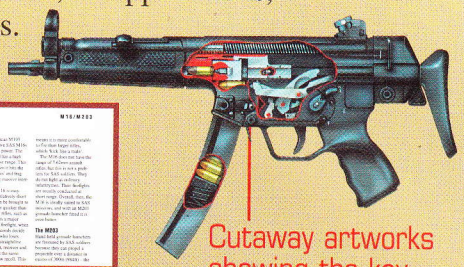

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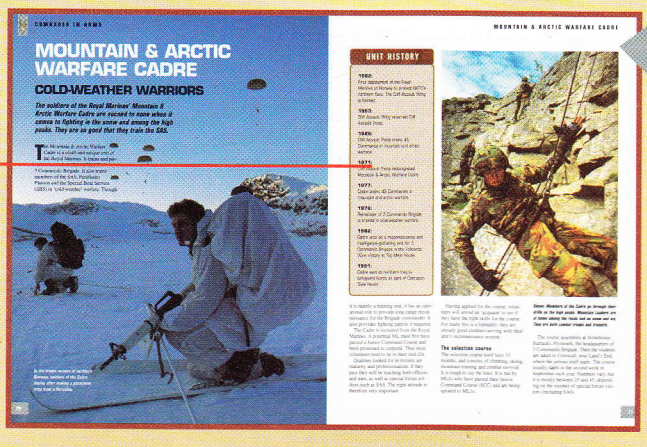
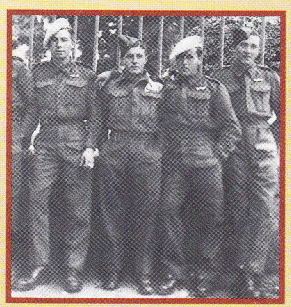


COMRADES IN ARMS

The elite units around the world that train with the SAS. The SEALS, Pathfinders, Australian and New Zealand SAS and the Green Berets. Also the units that have been trained by the SAS: GEO, Delta Force and many more.



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PANEL OF EXPERTS

The Publishers wish to thank the many SAS personnel, both currently serving and retired, who have acted as consultants and authors on this series. For reasons of security we are unable to name them individually.

SCUD HUNTING

Saddam's Scuds were threatening to blow the UN Coalition apart. So the SAS was sent into Iraq to destroy them.

Above: Deep inside Iraqi territory, a heavily armed SAS Land Rover and its crew struggle across a flooded valley. The poor weather did not stop the SAS finding and destroying the Scud missiles.

On 20 January 1991, four SAS mobile fighting columns left their desert base at Al Jouf in western Saudi Arabia and headed for Iraq. Their mission was to find and destroy enemy Scud missiles. The Gulf War was three days old. The United Nations (UN) air campaign had achieved total air superiority and everything appeared to be going to plan. However, Saddam Hussein had an ace up his sleeve: his mobile Scuds. From inside Iraq his Scud teams fired their missiles at Israel. The Jewish state threatened retaliation. If it attacked Iraq, the UN Coalition would fall apart. General Schwarzkopf, the UN Commander-in-Chief, therefore ordered the SAS's commander, Colonel Massey, to send his men into Iraq to destroy the Scuds.

SAS Gulf War Land Rovers

The SAS Land Rover columns, two from A Squadron, two from D Squadron, headed for western Iraq, where satellites and aerial photographs had shown the Scuds were being launched. The Land Rovers themselves had been specially modified, as a member of D Squadron relates: 'A fleet of new Land Rovers arrived for us from the UK, all stripped down for desert operations and decorated with a host of weapon mounts and additional fittings.'

The SAS's orders were: search out the Scuds and radio in air attacks to knock them out. In any contacts hit hard and get out fast. In enemy territory no one has time to hang around.

Each SAS fighting column had its own search area inside Iraq. In this way there would be no 'friendly fire' incidents. Each column was made up of 12 Land Rovers and at least two motorcycle outriders. The motorcycles were the eyes and ears of the Land Rovers, scouting ahead. The Land Rovers themselves were armed with machine guns, Milan anti-tank missiles, Mark 19 automatic grenade launchers and Stinger surface-to-air missiles.

BACKGROUND

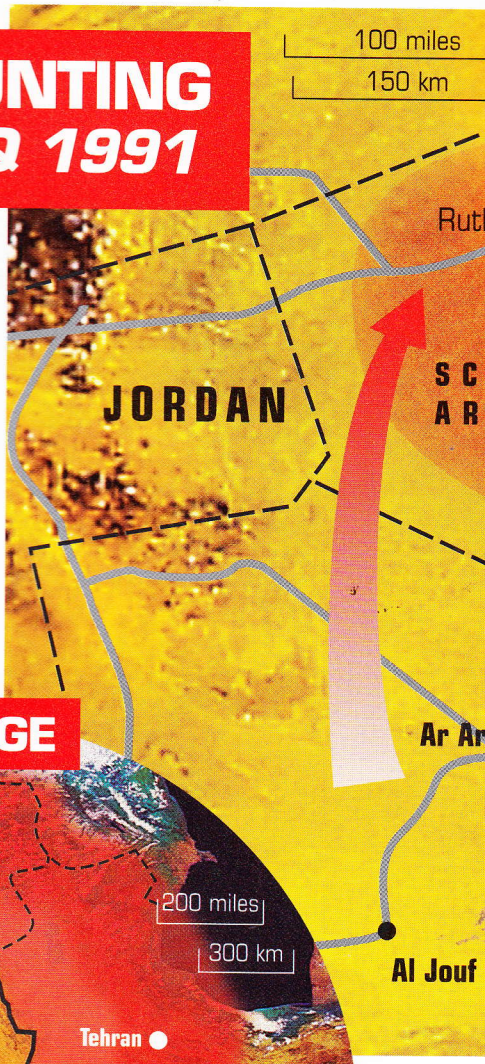
The borders between Iraq and Kuwait, both formerly part of the Ottoman Empire, have always been ill-defined. In addition, Iraq has periodically attempted to reclaim Kuwait as a lost province and to return to the situation that existed, according to the Iraqis at least, under the Ottoman Turks. After World War I Iraq and Kuwait came under British protection. The British tried to solve the border problem, but the subsequent Uqair Protocol of 1922 failed to define Kuwait's northern border. The establishment of an Arab nationalist government in Baghdad in 1958 increased tensions, but the deployment of British troops to Kuwait deterred an Iraqi invasion in 1961.

The immediate cause of the 1991 Iraqi invasion of Kuwait stemmed from the refusal of the Kuwaitis to defer the $65 billion debt Iraq owed her. In addition, Iraq believed that Kuwait was extracting oil from the Rumaila oilfield, which lay in a disputed area of territory between the two states. Iraq was also attracted to Kuwait's massive financial reserves, which could obviously alleviate the $80 billion debt she owed as a result of fighting the eight-year Iran-Iraq War and which she was finding very hard to service due to falling oil prices.

Above: Iraqi military vehicles on the streets of Kuwait City after Saddam Hussein's invasion. The tiny Kuwaiti Army fought well, but was hopelessly outnumbered by over 100,000 Iraqis.

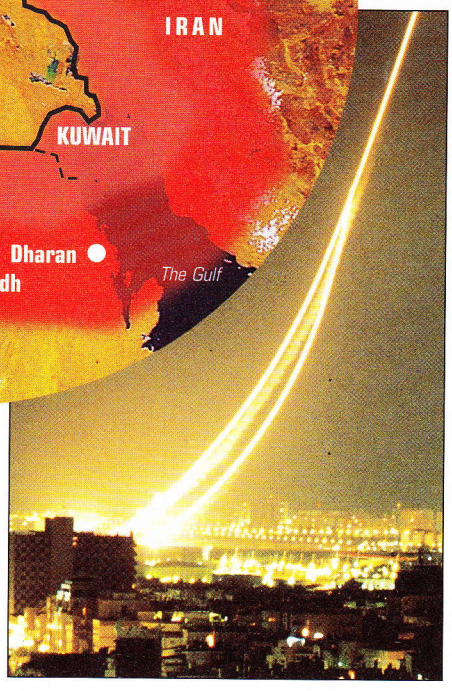
SAS SCUD HUNTING
WESTERN IRAQ 1991

The Iraqi Scuds aimed at Israel were fired from Western Iraq. In response, Allied aircraft were ordered to find and destroy the mobile Scud launchers. However, they failed to stop the Scud teams from operating. The SAS was therefore sent into Western Iraq to do the job. From their base at Al Jouf, SAS fighting columns began the Scud hunt. The American special forces unit, Delta Force, also took part. Delta Force teams were flown from their base at Ar Ar into Iraq, where they operated around the town of Al Qaim.

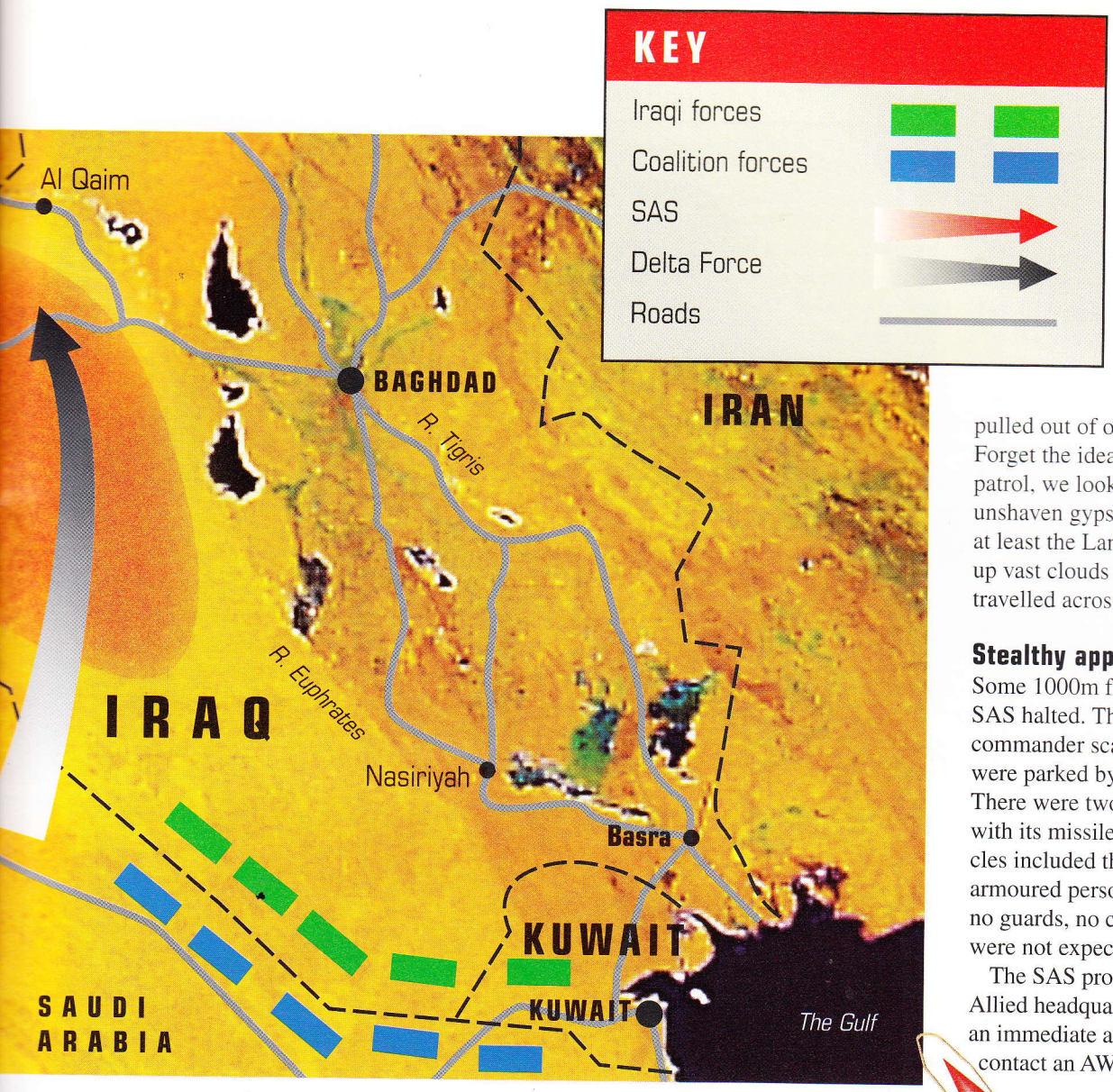


SCUD MISSILE RANGE

This map shows the maximum range of Iraqi Scud missiles launched from Iraq itself. The Scud B had less range than the Iraqi-modified Scud, which was called Al-Hussein.



Right: A Patriot surface-to-air missile streaks into the sky over Tel-Aviv, Israel, to intercept an incoming Scud. US-supplied Patriots destroyed most of the Scuds fired at Israel.



It was cold and wet in western Iraq in January 1991: 'We wore desert combats, but on their own they were no match for the terrible conditions. So, Goretex jackets, climbing jumpers, gloves, arctic smocks and woolly hats were pulled out of our bergens for warmth. Forget the idea of a smartly dressed patrol, we looked like a bunch of unshaven gypsies.' However, in the wet, at least the Land Rovers wouldn't kick up vast clouds of tell-tale dust as they travelled across the desert.

Stealthy approach

Some 1000m from the enemy convoy the SAS halted. Through binoculars the SAS commander scanned the scene. The Iraqis were parked by the side of the road. There were two Scud launchers, each with its missile ready to fire. Other vehicles included three trucks and two armoured personnel carriers. There were no guards, no camouflage netting. They were not expecting visitors.

The SAS procedure was simple: radio Allied headquarters in Riyadh to request an immediate air strike. HQ would then contact an AWACs aircraft, which would

The SAS soldiers were nervous about air attacks. They had been told that there were no Iraqi aircraft flying, but they were sceptical. The terrain was open and mostly flat. The vehicles could be seen for miles: 'we stood out like turds on a billiard table'. If they were spotted, they would be sitting ducks.

The first sighting

The first few days were frustrating. No sign of enemy aircraft, but no sign of Scuds either. Then, on 29 January, bingo! Captain 'A' and his column were some 100km (62 miles) inside Iraq when one of his outriders came racing back with news that a Scud convoy was near. The captain gave his orders, and the Land Rovers deployed into line and advanced towards the Scuds. There were three men on each vehicle: a driver and two gunners. The gunners flicked off the safety catches on their machine guns.

IRAQI SCUD LAUNCHER

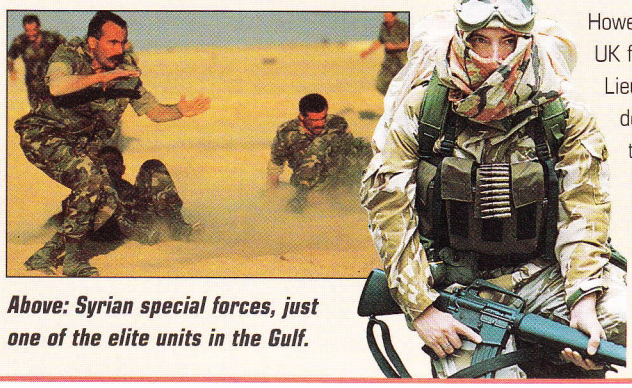
SPECIFICATIONS

Range	180km (112 miles)
Launch weight	6370kg (14,043lb)
Crew	three
Speed	50km/hr (31mph)
Engine	6000cc
Armament	None

BRIEFING

The SAS in the Gulf was part of the UK Special Forces Group, which was just one of the special forces formations in the Gulf. Other UN contingents had their own elite teams. The first task earmarked for the SAS was the rescue of Western hostages being held as 'human shields' by the Iraqis at several sites throughout Iraq. The Regiment put together a contingency plan for the rescue of the hostages, which involved heliborne assaults against the targets where it was thought the hostages were being held.

The release of the hostages before the war started meant that for a while the SAS had no definite role. However, the commander of UK forces in the Gulf, Lieutenant-General Peter de la Billière, decided that the Regiment should carry out reconnaissance and intelligence-gathering behind enemy lines. The hunt for Scuds was well down the list.



Above: Syrian special forces, just one of the elite units in the Gulf.

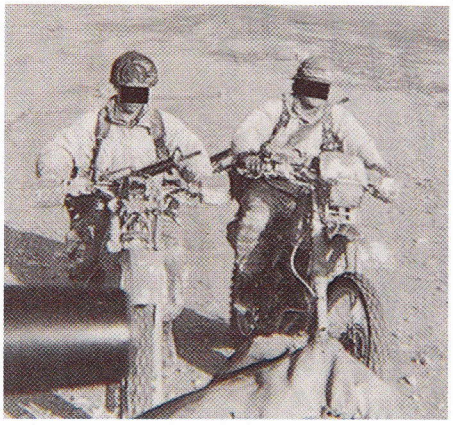
direct available aircraft on to the target. The captain gave the coordinates using his Global Positioning System (GPS) unit, which worked via satellites orbiting the earth. It gave the user his exact position anywhere on earth. Just switch it on, press a key and the precise coordinates would flash up on screen.

The SAS vehicles were well spaced, at least 50m apart, as a precaution against attack. It takes at least an hour to launch a Scud missile; to aim it, load the fuel and make the pre-flight checks. The SAS captain hoped they had arrived in time. Some 10 minutes later two F-15 Eagles came screaming in low from the south. The missiles were still on their launchers. The aircraft strafed the Iraqi vehicles. Then the two aircraft circled lazily above, their pilots scanning the scene. The two Scud launchers had been destroyed. Time to leave: 'We roared off at full speed, our minds racing with thoughts of what any surviving Iraqi commander might do. We are trained to think like the enemy so we can take effective evasive action.'

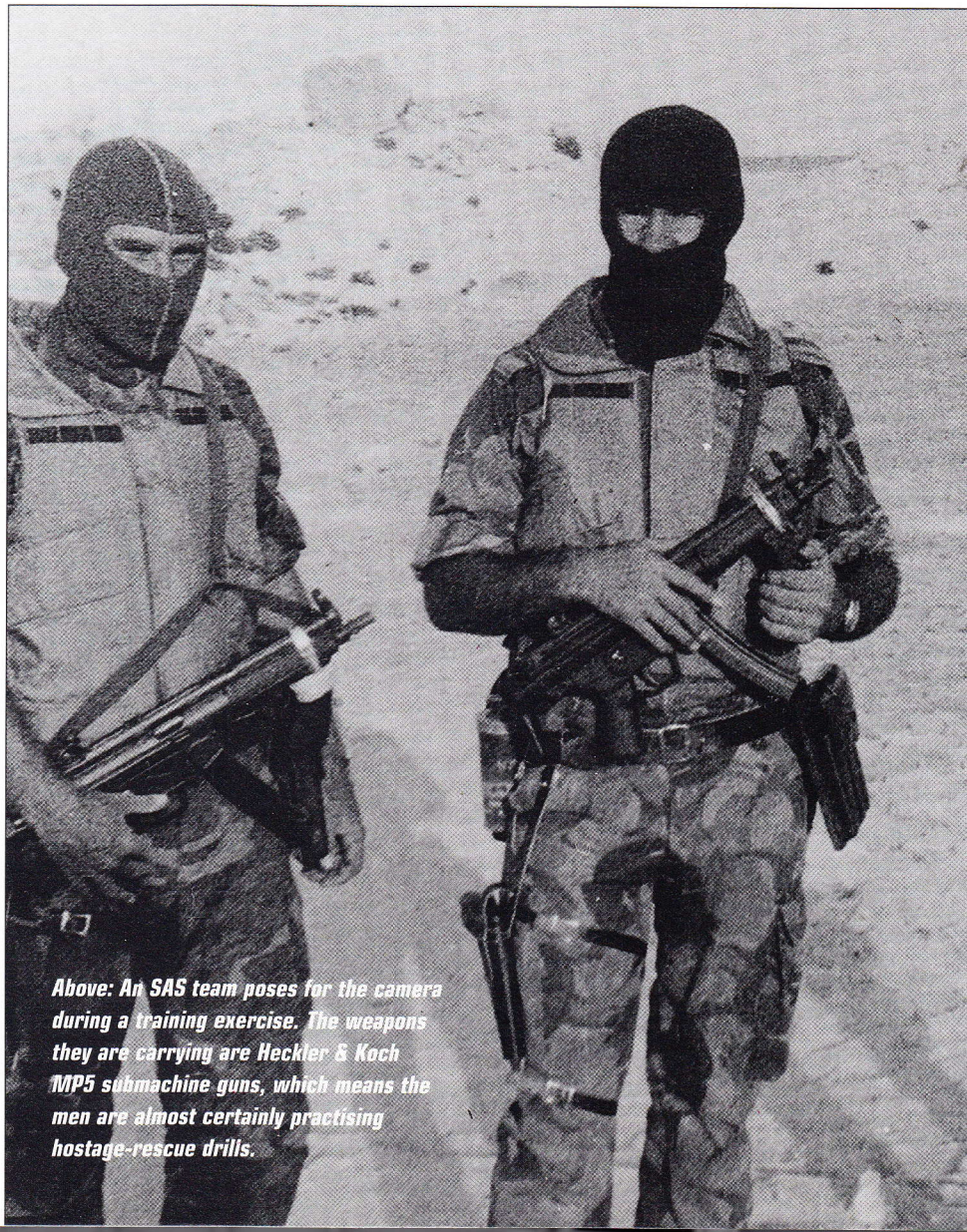
More Scud kills

Earlier the same day, in a different sector, another SAS column had also spotted a Scud convoy, and it too had been destroyed by F-15s. It was not all one-way traffic, though: the enemy also had patrols out.

Later that day a third SAS fighting column was attacked by Iraqis. They appeared out of nowhere; the first the

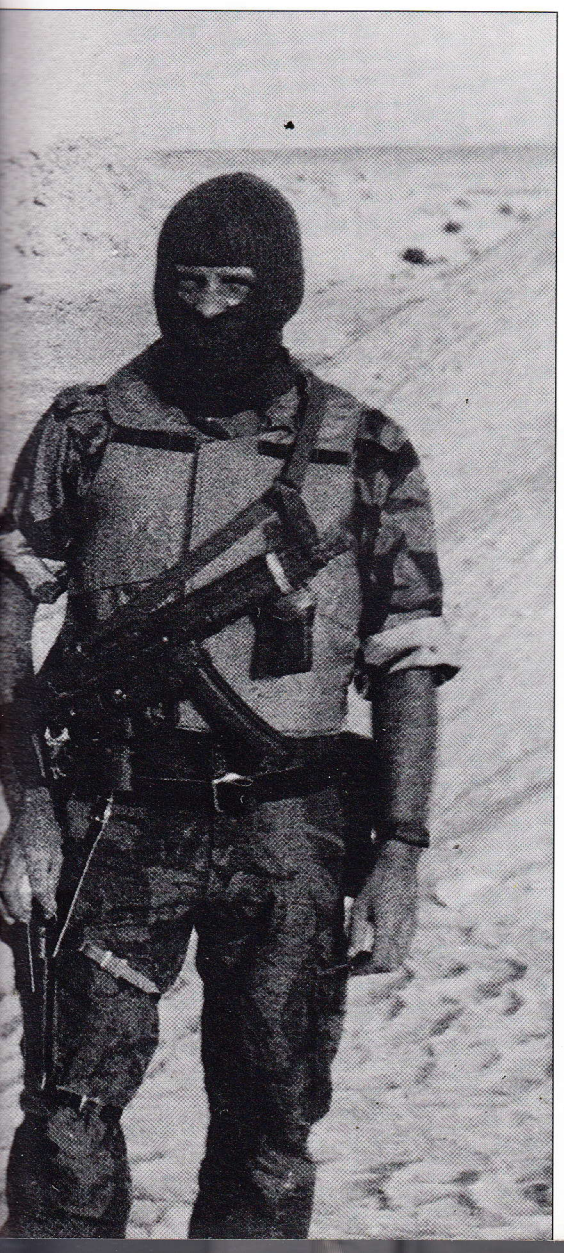


Above: Western Iraq, late January 1991. Two SAS motorcycle outriders in 'bandit country'. Note the M16 assault rifle each man carries.



Above: An SAS team poses for the camera during a training exercise. The weapons they are carrying are Heckler & Koch MP5 submachine guns, which means the men are almost certainly practising hostage-rescue drills.

Above: A British CH-47 Chinook helicopter. These aircraft were used by the SAS to transport men and supplies to its Forward Operating Base at Al Jouf, as well as into enemy territory. Note the distinctive special operations paint scheme used in the Gulf. The Chinooks used by the SAS had extra internal fuel tanks to allow them to fly deep into Iraq.



destroyed quickly. Their 50mm main guns could turn SAS Land Rovers into burning heaps of scrap metal.

Half the Land Rovers were fitted with Milans, which were fitted to the roll bars. The SAS soldiers looked through their sights and lined the cross-hairs on the Iraqi targets. They then squeezed their triggers and the missiles streaked from their launchers. The aimers kept the cross-hairs on the targets, making small adjustments to the wire-guided rockets. The missiles slammed into their targets, the armour-piercing rounds burning through the hulls and incinerating all those inside. Before this happened, though, one of the Iraqi infantry fighting vehicles had hit another Land Rover. The round impacted on the engine, setting it on fire. The crew baled out just as it exploded into a red fireball.

The enemy were still advancing on the SAS. Iraqi soldiers poured out of the trucks and charged towards the Land Rovers. SAS weapon skills are the best in the world, and each man is trained not

SAS knew about it was when the rear Land Rover was hit by a cannon round. It blew off one of the wheels and seriously injured the rear gunner. He was dragged unconscious to another Land Rover by the other two crew members as the Iraqis closed in.

The SAS vehicles quickly turned around to face their attackers. They deployed in line and halted. The three Iraqi infantry fighting vehicles had to be

KNOW THE ENEMY

Iraq had the fourth-largest army in the world when it launched the invasion of Kuwait. With nearly one million men under arms, 5500 tanks and 400 combat aircraft, Saddam Hussein felt he could offer real resistance to any Allied attempts to take back Kuwait.

Though the majority of his troops were deployed in and around Kuwait, Saddam also had forces in western Iraq, where the SAS operated. These ranged from frontline armoured and mechanised troops equipped with tanks and infantry fighting vehicles, to local militia units. The SAS never came up against enemy tanks, but they did have to cope with infantry fighting vehicles, such as Russian-built BMPs, and armoured personnel carriers, such as BTR-60s. The BMPs were armed with a cannon and anti-tank guided missiles, and posed a grave threat to SAS foot patrols or Land Rover columns.

In general the SAS found the fighting qualities of the Iraqis to be poor. For the most part they were reservists and conscripts. As such they were no match for the toughened soldiers of the SAS.

Left: Triumphal Iraqi troops hitch a lift on a tank during the First Gulf War. In general the fighting skills of the average Iraqi soldier were poor.

EYEWITNESS

Contact near Nukhayb
29 January 1991

'The Iraqis came towards us, all in a line, about 50 or 60. I was front gunner in one of the Rovers. I tightened the grip on the GPMG. We open up, 3- or 5-round bursts. The Iraqis go down. It's like slow motion. There are empty shell cases flying everywhere. My heart's pounding. Keep firing! I hit an Iraqi. His chest explodes. They're not humans, only targets. I feel a light tap on my arm. I'm hit but feel no pain. The adrenalin rush is unbelievable. Keep firing! Another belt into the GPMG. I kill another, and another. My gun jams. Shit! I pick up my M16. Safety catch off. It feels light compared to the GPMG. Aim, fire, aim, fire. Elation!'

Name withheld for security reasons

to fire until he has a target. The gunners had lots of targets, and they were working overtime. Firing 3- or 5-round bursts, the GPMGs and Brownings tore into the enemy ranks. The Iraqis stopped and dived to the ground. They were pinned down, too far away to use their AK-47s effectively. Iraqis began to die where they lay, their heads and upper torsos blown apart by machine-gun rounds. Another Milan round streaked across the desert floor and slammed into one of the trucks, setting it on fire.

First blood to the SAS

The Iraqis had had enough. They pulled back, boarded their remaining trucks and fled into the distance. The ground was littered with burning vehicles and dead bodies. The SAS, too, decided not to hang around. The two damaged Land Rovers were abandoned.

At night the SAS columns rested. The vehicles were parked in a circle and camouflaged with netting. They would stay there all the next morning, only venturing out in the late afternoon. Standard operating procedures (SOPs) were simple: attack at dusk, escape in the fading light.

The Scud hunt continued. On 3 February, an SAS scouting party near the town of Ar Rutbah spotted an enemy column of 14 vehicles, all parked and under camouflage. The Iraqis moved off. The SAS followed, at a distance, and ordered an air strike. A few minutes later the F-15s appeared and hit the column.

In for the kill

As the smoke cleared, it was obvious that only one of the launchers had been destroyed. There were still two left. The SAS commander radioed for another air strike, but was told that no aircraft were available for some time. He therefore decided to finish off the convoy himself, and gave the signal to move forward.

The SAS Land Rovers advanced towards the enemy. Seconds later Milan missiles hit their targets. The remaining Scud launchers were obliterated. However, the SAS had strayed within enemy machine-gun range. Iraqi rounds from several machine-gun nests began bouncing off the Land Rovers and kicking up dirt around them.

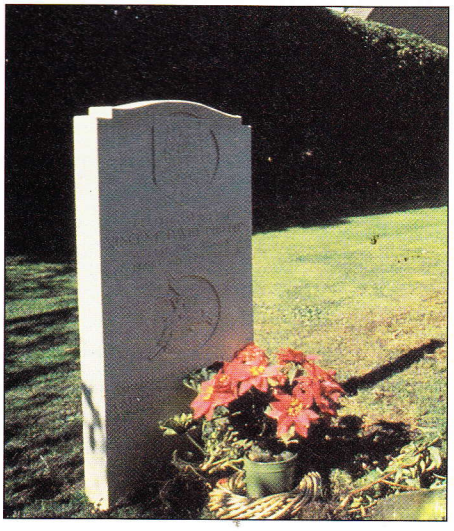
SAS soldiers grabbed their machine guns and ammunition and threw themselves on to the ground behind any cover they could find. The Land Rovers were totally exposed – to stay on them meant certain death. In the fading light the two sides fought a vicious firefight. The SAS soldiers fired controlled bursts, using tracer rounds to pin-point enemy targets. Automatic machine-gun fire and heavy calibre cannon rounds swept across the barren landscape. The SAS soldiers were winning, they were killing the enemy slowly but surely. The Iraqis refused to budge, though. The SAS commander knew he and his men had to leave before enemy reinforcements arrived.

The low rumbling in the distance signalled salvation. Two more F-15s appeared out of the gloom and hit the Iraqi

Right: A photo for the folks back home. The crew of an SAS Land Rover pose under a Milan launcher.

Left: The lucky ones. Allied prisoners, SAS included, just after their release from Iraqi captivity at the end of the war.

Below: Some paid the ultimate price. The grave of SAS soldier Vince Phillips, a member of 'Bravo Two Zero', who died in Iraq.



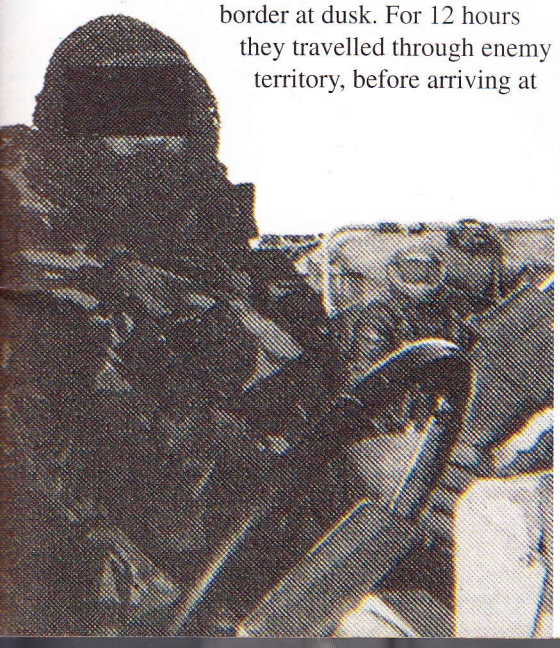
column. When the smoke cleared there were no signs of life. A relieved SAS commander gave the order to retire.

By mid-February the SAS columns had almost halted the launch of Scuds against Israel. But there was no time for congratulations. The countryside was alive with Iraqi troops, all hunting for the Western soldiers.

The SAS columns inside Iraq had done a fantastic job. But they had shot off most of their ammunition, used up nearly all their fuel, and eaten much of their food. If they were to stay inside enemy territory they needed re-supplying. No problem. The Regiment would take care of it.

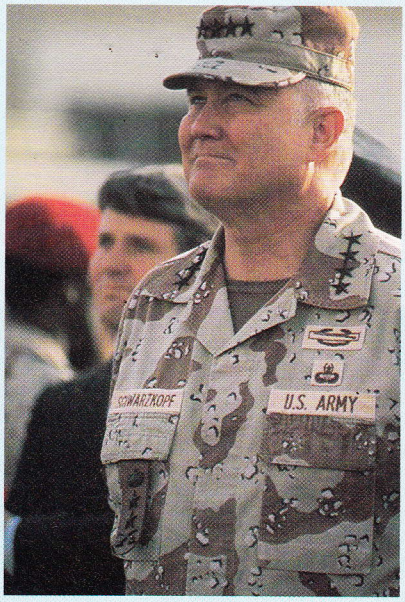
From its base at Al Jouf, the SAS put together a column of four-tonne trucks and loaded them with everything the fighting columns would need. The trucks, escorted by Land Rovers and motorcycle outriders, crossed the border at dusk. For 12 hours they travelled through enemy territory, before arriving at the rendezvous, a steep wadi 145km (90 miles) inside Iraq. Over the next 24 hours all the columns came in and re-supplied themselves.

The SAS soldiers were on the hunt once more. However, most of the Scuds had been found and knocked out. By the second half of February 1991 the SAS mobile patrols began returning to Al Jouf, secure in the knowledge that they had saved the UN Coalition.



DEBRIEFING

The SAS achieved a major success in tracking down the Scuds in western Iraq, which prevented Israel entering the war. There was, though, a price in terms of blood: four SAS soldiers were killed during the conflict. The SAS's contribution was summed up by the UN Commander-in-Chief, General Schwarzkopf: 'I wish to officially commend the 22nd Special Air Service (SAS) Regiment for their totally outstanding performance of military operations during Operation "Desert Storm"... The performance of the 22nd Special Air Service (SAS) Regiment during Operation "Desert Storm" was in the highest traditions of the professional military service and in keeping with the proud history and tradition that has been established by that regiment.'



Right: General Schwarzkopf, who was initially sceptical about elite units. The SAS's actions made him think differently.

M16/M203 FORCE MULTIPLIER

The M16 assault rifle is an SAS soldier's best friend. Its 5.56mm rounds cut through flesh and bone with ease and, fitted with an M203 grenade launcher, it can also kill tanks.

It looks and feels like a toy. It has a plastic butt and foregrip, it weighs only 2.86kg (6.25lb) and it is only 990mm (39in) long. It makes a light popping sound when it fires instead of the loud crack of heavier assault rifles. Yet the M16, as used by the SAS, is one of the best firearms in the world.

Why do SAS soldiers like the M16? Mainly because it suits the type of mission they undertake, such as jungle operations: 'Though it doesn't have long range, it is light and compact, and is ideally suited to jungle warfare.' It is also reliable. SAS soldiers often operate in four-man teams behind enemy lines. They therefore need small arms that work first time every time. In the M16 assault rifle they have such a weapon.

The SAS has used the American M16 since its war in Borneo in the early 1960s. From the 1970s it has also used the 40mm M203 grenade launcher, which is a significant force multiplier for an SAS four-man patrol.

The M16 was originally designed by Eugene Stoner in the 1950s. He designated the weapon AR15. In 1957, it was licensed to Colt and large-scale production began. It entered service with US forces in the 1960s, under the designation M16A1.

Short-range lethality

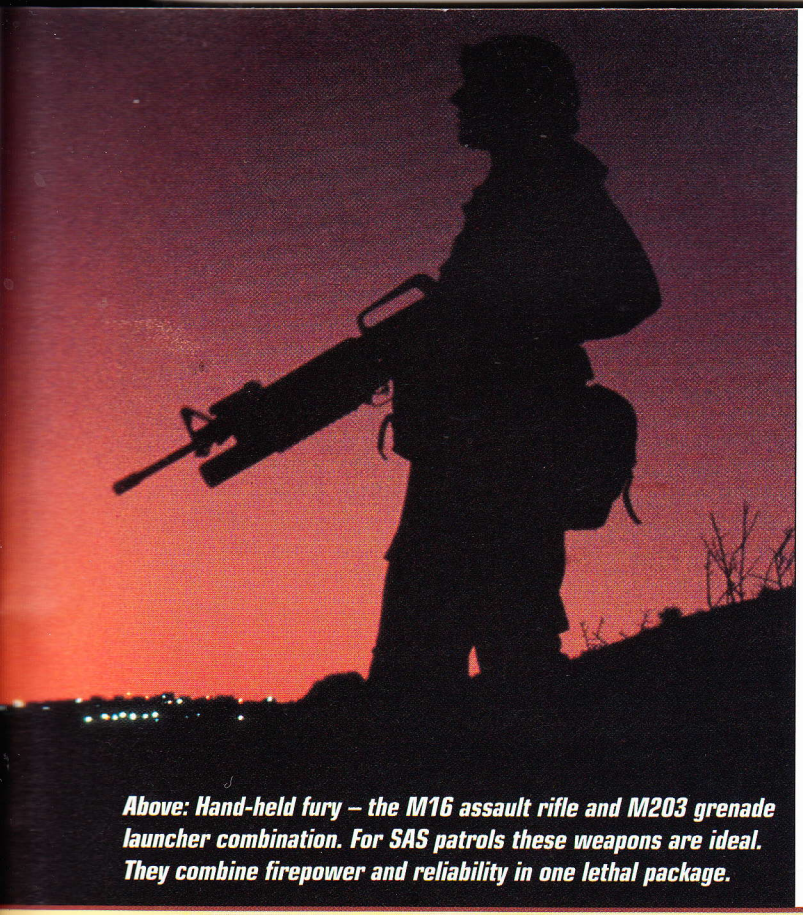
The latest version is the M16A2, which has a new foregrip made of a stronger plastic and new firing modes. To deter wild firing it has no automatic fire capability. Instead it has a three-round burst mode.

SAS soldiers load their M16s with SS109 rounds, which are heavier and slower

The M16/M203

SPECIFICATIONS

Calibre	5.56mm
Weight (M16 only)	2.86kg (6.25lb)
Weight (with M203)	4.49kg (9.75lb)
Length	990mm (39in)
Effective range (M16)	400m (1312ft)
Effective range (M203)	350m (1148ft)
Rate of fire	800rpm (cyclic)
Feed	30-round magazine
Muzzle velocity	1000mps (3282fps)



Above: Hand-held fury – the M16 assault rifle and M203 grenade launcher combination. For SAS patrols these weapons are ideal. They combine firepower and reliability in one lethal package.

than the American M193 round. They give SAS M16s more stopping power. The 5.56mm round has a high lethality at close range. This means that when it hits the body it 'tumbles' and fragments, causing massive internal injuries.

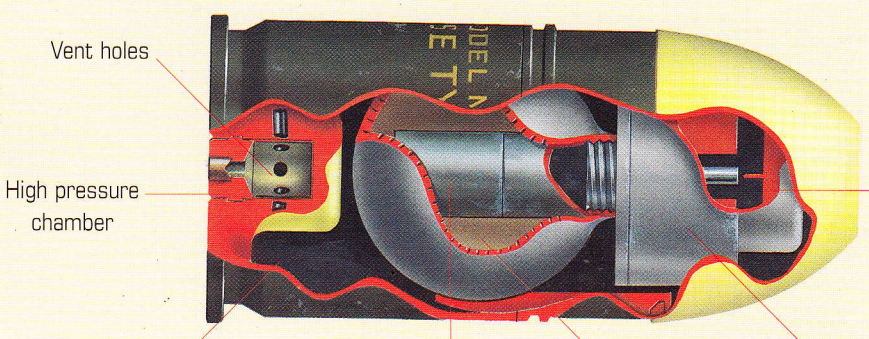
Firing the M16 is easy. Because it is relatively short and light, it can be brought to bear on a target quicker than heavier assault rifles, such as the SLR. This is a major advantage in a firefight, when the first few seconds decide who wins and who loses. Because of its straightline layout (the butt, receiver and barrel are all at the same level), it has low recoil. This means it is more comfortable to fire than larger rifles, which 'kick like a mule'.

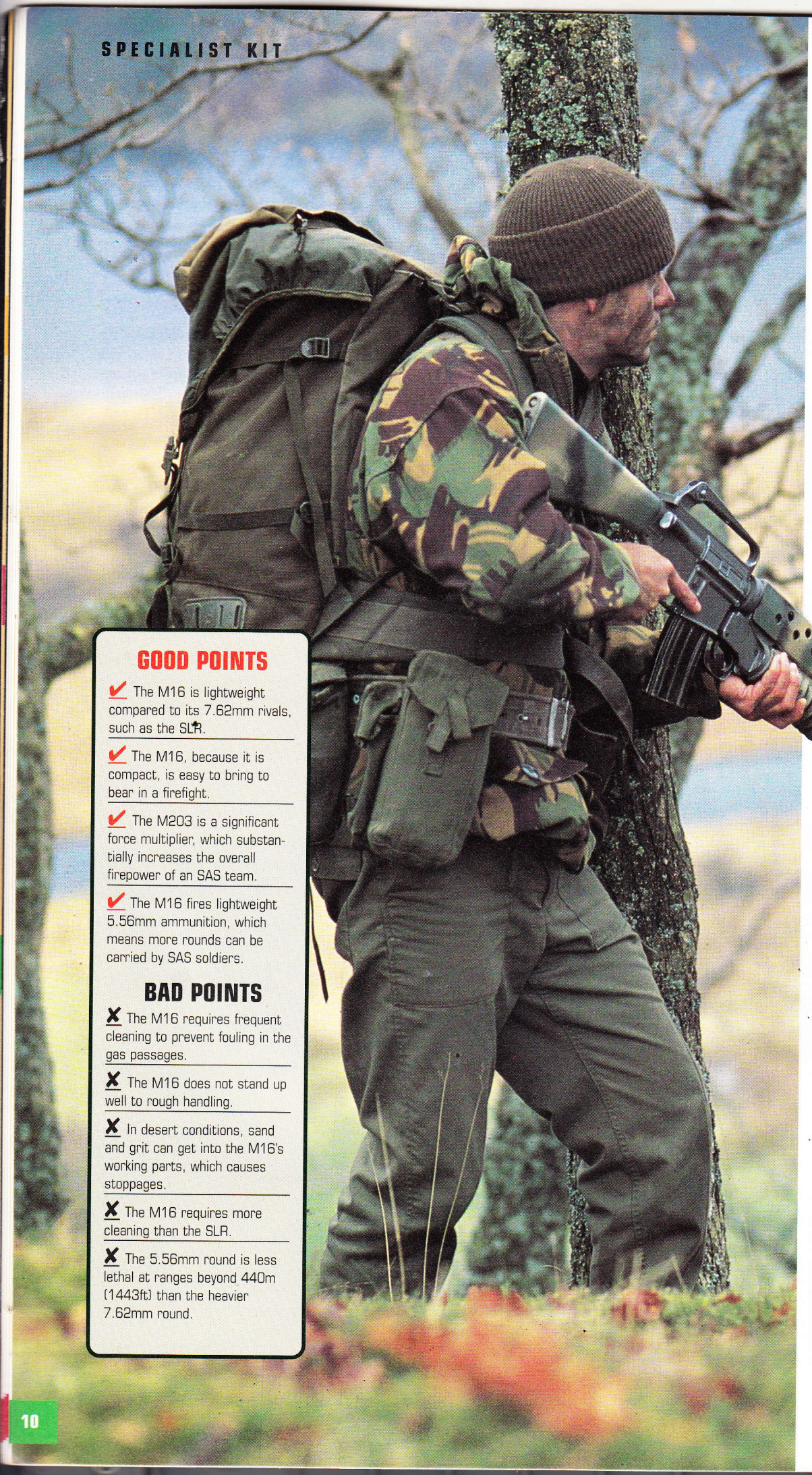
The M16 does not have the range of 7.62mm assault rifles, but this is not a problem for SAS soldiers. They do not fight as ordinary infantrymen. Their firefights are usually conducted at short range. Overall, then, the M16 is ideally suited to SAS missions, and with an M203 grenade launcher fitted it is even better.

The M203

Hand-held grenade launchers are favoured by SAS soldiers because they can propel a projectile over a distance in excess of 300m (984ft) – the

40MM Grenade





GOOD POINTS

✔ The M16 is lightweight compared to its 7.62mm rivals, such as the SLR.

✔ The M16, because it is compact, is easy to bring to bear in a firefight.

✔ The M203 is a significant force multiplier, which substantially increases the overall firepower of an SAS team.

✔ The M16 fires lightweight 5.56mm ammunition, which means more rounds can be carried by SAS soldiers.

BAD POINTS

✘ The M16 requires frequent cleaning to prevent fouling in the gas passages.

✘ The M16 does not stand up well to rough handling.

✘ In desert conditions, sand and grit can get into the M16's working parts, which causes stoppages.

✘ The M16 requires more cleaning than the SLR.

✘ The 5.56mm round is less lethal at ranges beyond 440m (1443ft) than the heavier 7.62mm round.

M203 itself has a range of 350m (1148ft) – which is obviously greater than a hand grenade. In addition, they can fire a variety of rounds, such as high explosive, anti-armour or anti-personnel. They are particularly useful if a unit is ambushed, as a grenade launcher can lay down a large amount of fire-power at short notice.

SAS grenade launchers

In the 1970s the SAS used the American M79 grenade launcher, a single-shot, breech-loading weapon. It was lightweight, accurate and could take a lot of punishment. However, it had one major disadvantage: it was a dedicated weapon. This means that the man firing it carried nothing else, and was therefore defenceless until he loaded another grenade into the breech.

In recognition of this the manufacturer came up with the M203: a 40mm single-shot grenade launcher that could be fitted under the barrel of the M16.

The operation of an M16 with an M203 attached is unaffected, apart from having an additional 1.63kg (3.5lb) in weight fixed. With M203s all the members of an SAS patrol could put down high-explosive suppressive fire. And they could still fire their assault rifles.

To fire the M203 the user has to pull the trigger on the

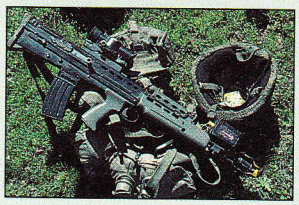
Left: Easy to bring to bear and a delight to shoot, the M16 is top of the SAS assault rifle list. It is also lighter than many 7.62mm guns – a bonus for foot patrols.

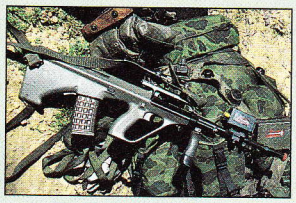
COMPETITORS

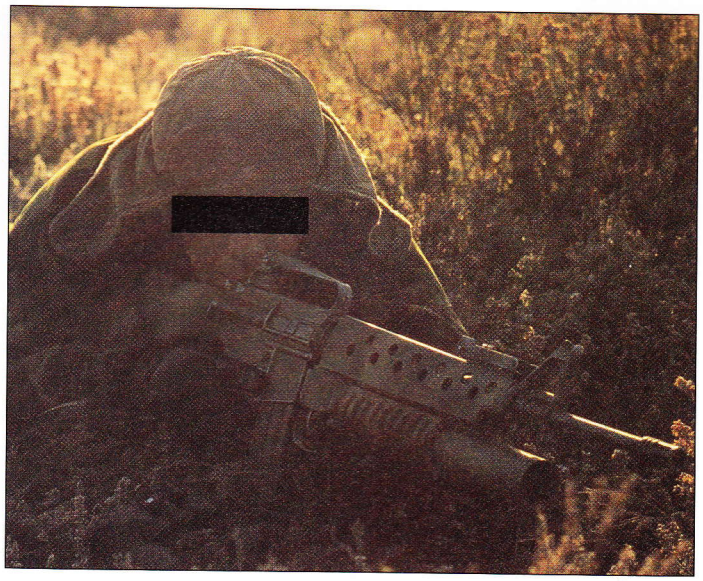
The M16 is the main SAS personal weapon in use with the Regiment. Its main competitors are the SA-80 and Steyr AUG, both of which have been tested by the SAS.

The SA-80 (below left) is easier to handle than the M16, but is thought unreliable by SAS soldiers. However, its range – 400m (1312ft) – is as good as the M16's and its accuracy is greater. In addition, it is lighter.

The Steyr AUG (below right) is an altogether better assault rifle than either the M16 or the SA-80. It has been used by SAS troopers, notably in Northern Ireland. It has excellent accuracy, optical sights, is reliable and can take a lot of punishment (much more than the M16). In addition, the AUG can be turned into anything from a submachine gun to a light support weapon by simply swapping parts. This makes it very flexible.



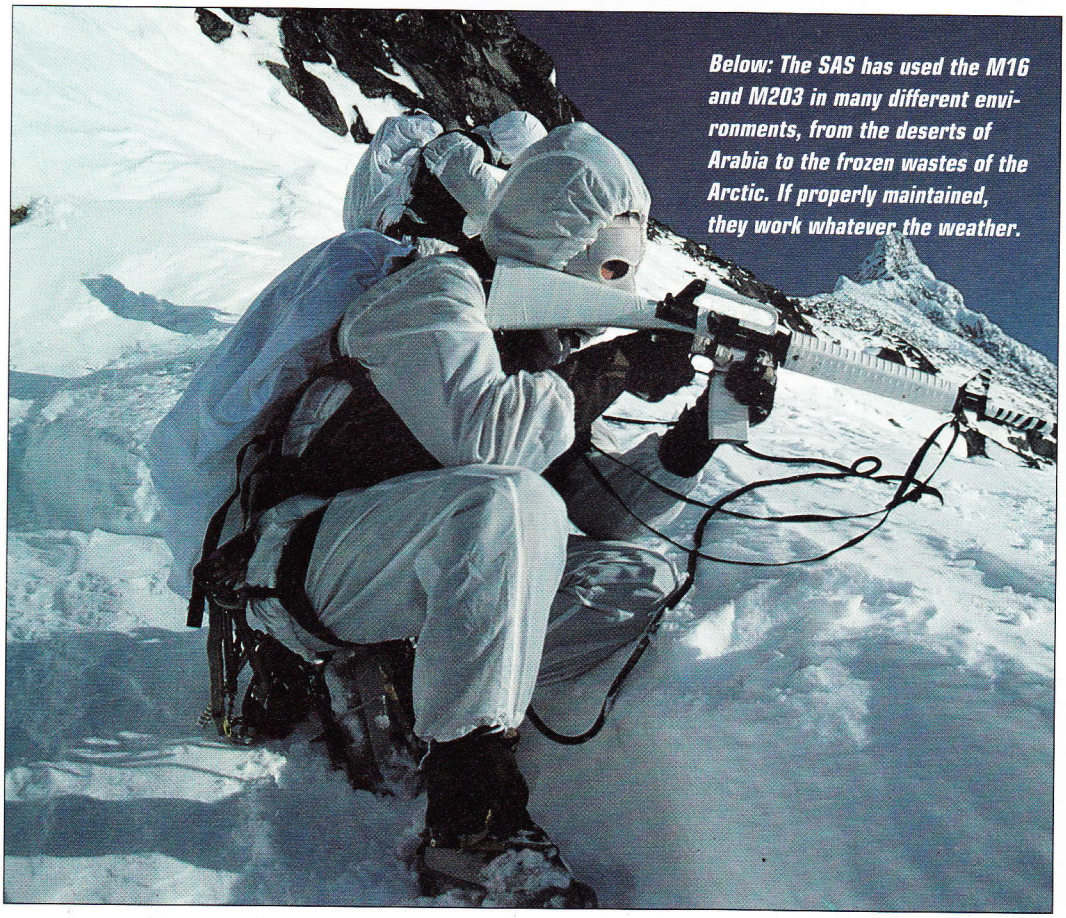




Above: In SAS ambushes, the M16 spews death at a rate of 800 rounds per minute.

grenade launcher itself, which is located under the M203's chamber.

It is as a fragmentation weapon that the M203 is used by the Regiment. On Pebble Island during the 1982 Falklands War, for example, M203s were used against stationary enemy Pucara aircraft. In addition, they were also used against some of the Argentine garrison on the island.



Below: The SAS has used the M16 and M203 in many different environments, from the deserts of Arabia to the frozen wastes of the Arctic. If properly maintained, they work whatever the weather.

The M203 in action

One of those who took part in the raid, Corporal Davey, D Squadron, tells the story: 'Just off the airstrip we heard Spanish voices, at least four or five, shouting some 50m [164ft] towards the settlement. I opened fire with an M203 and put down some 60 rounds [of M16 ammunition] in the direction of the voices. Two very pained screams were the only reply.'

Another who took part gave an example of the effect of the M16 and M203: 'The M203 grenades detonated on the aircraft. I clipped a fresh mag into my M16 and looked around for fresh targets. By this time the aircraft were either on fire or had been riddled with bullets.'

The M16 and M203 have been in SAS use for over 20 years, and are likely to remain in use for at least the next 20.

DEMOLITIONS AND SABOTAGE

Modern explosives mean that SAS soldiers can wreak havoc behind the lines against a host of targets. Bridges, depots, railway lines and command centres are all on the hit list.

In wartime, SAS teams operate deep behind enemy lines. Therefore, the demolition and sabotage of key vulnerable enemy military and industrial targets is one of the most important functions of the Regiment.

What does the SAS hit behind the lines? Sabotage missions will target ports, ships, vehicles, aircraft, bridges, roads, railway lines and depots. In addition, communications centres will be hit, as they are vital to the enemy's command and control network. In this way enemy troop movements will be interrupted. Enemy soldiers will also be tied down with defending sites against sabotage or hunting for saboteurs.

Targets are selected according to their value. Blow a bridge behind the lines during a friendly offensive, for example, and an SAS team can stop enemy reinforcements being sent to where the front has been breached.

Explosives

Once the target has been identified, the next stage is the preparation of equipment. Successful sabotage missions rely on the right type of explosives and their correct placement on the target.

There are two types of explosives: low explosives and high explosives. With low explosives the ignition sequence is set off by a spark or flame. Gunpowder is a good example. Light a match near it and it will explode. However, when it gets damp it will not work. This is obviously no use to soldiers who often have to operate in wet terrain. Low explosives are therefore rarely used by SAS soldiers, except in home-made devices.

High explosives, as used by the SAS, are much more effective than low explosives. When they are detonated, for example, they produce a shock wave (blast) that has a great shattering effect. The high explosives used by SAS soldiers include British Army standard-issue PE4 plastic explosive, which was used in the 1991 Gulf War, RDX, PETN, Semtex, M118 demolition charge, Pentolite and Ednatol.

Home-made explosives

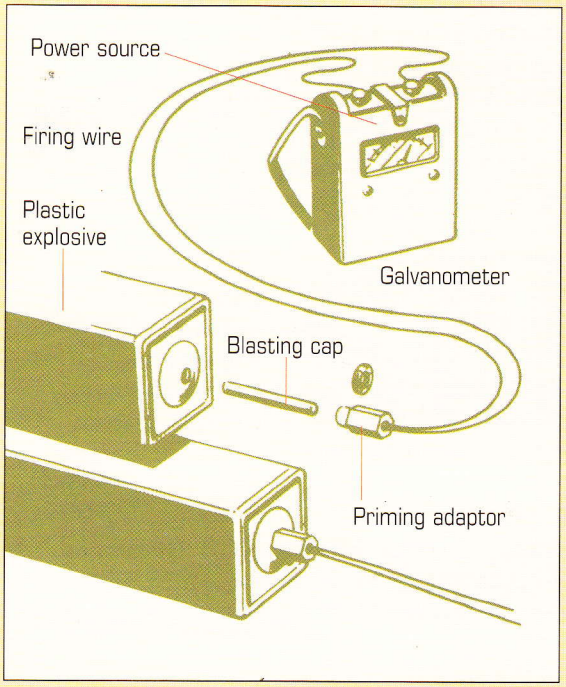
Members of the Regiment are also required to have a practical, working knowledge of a third type of explosives. These are home-made 'kitchen sink' explosives. They can be mixed together and used whenever, and wherever, the opportunity arises.Though created from the most mundane domestic ingredients, such as household bleach, garden fertilisers and weed-killers, in the right hands they can be extremely effective.

The Regiment also teaches its personnel to create their own munitions. Even without an 'off the peg' Claymore mine, for example, an SAS team in enemy territory can

Below: The power of modern plastic explosives. In the hands of SAS soldiers charges can be made to cut through steel, shatter concrete and vaporise flesh.

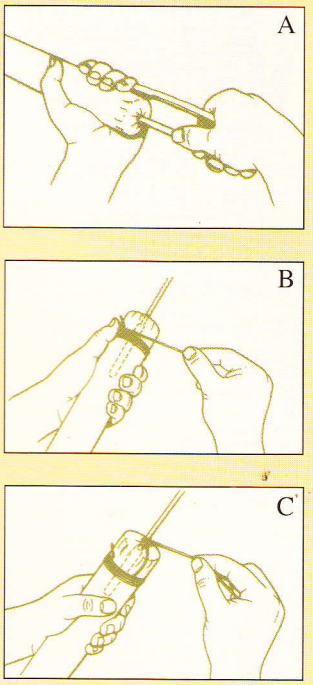
DETONATORS

Electric

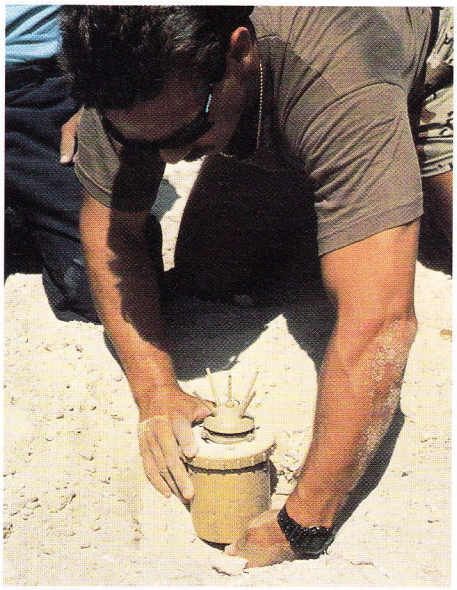


These diagrams illustrate the two types of detonators used to ignite explosives. With the electric detonator (left), an electrical current flows from a battery to a blasting cap. Inside the cap are two wires, which are connected by means of a bridge wire. When the current is passed through the wires the bridge wire gets hot. The hot bridge wire ignites the charge within the cap, thus detonating the explosive. In the non-electric detonator (right), a hole is made in the explosive (Diagram A). A non-electric blasting cap is inserted into the hole, with a fuse connected to the blasting cap (Diagram B). The blasting cap provides the detonating impulse required to ignite the charge. The fuse consists of gunpowder encased in a fibre wrapping (Diagram C), itself covered with a waterproof material. The fuse is ignited by a flame.

Non-electric



still lay an effective ambush. All they need is a plastic container, plastic explosive, detonator and a few nuts and bolts. The result is a home-made Claymore. Connect it to a trip-wire and any enemy patrol stumbling across it will be cut to pieces by shards of hot steel.



Above: It looks harmless. However, this mine is packed with explosive. Step on it and it will take your leg off.

Home-made explosives are useful for killing enemy soldiers, but they are of little use against buildings, bridges, tanks or aircraft. They just do not have the destructive force. Larger targets require high explosives, and high explosives require detonators.

Detonators

High explosives cannot be set off without a detonator – an 'initiator'. Take PE4, for example, the type taken behind the lines by the SAS patrol codenamed 'Bravo Two Zero' during the Gulf War. PE4 resembles Plasticine. It can be moulded in the hands. You can jump up and down on it and hit it with a hammer. It can even be set alight. But it will not explode; not without a detonator.

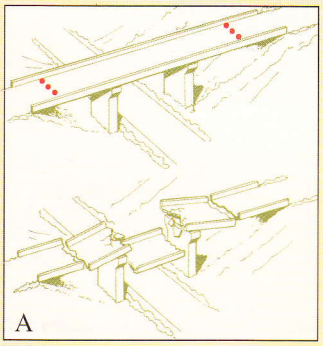
Types of detonator

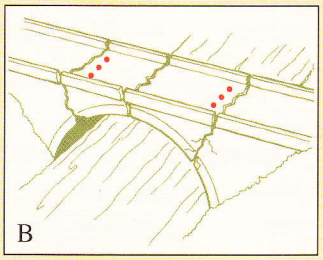
There are two types of detonator: electric and non-electric. Electric detonators are usually powered by a battery. This sends an electric current into a firing cap, which in turn explodes, detonating the explosive. A non-electric detonator can serve as a back-up device should the main detonator be disabled. This simple set-up consists of a blasting cap connected to a length of fuse cord which is made from black powder – gunpowder – wrapped in fibre. This has the benefit of simplicity, in that there are no electrics to go wrong. All that needs to happen is for the fuse cord to be set alight.

Above: What every SAS soldier has tucked in his bergen: PE4 plastic explosive (left), the kind used by the SAS during the 1991 Gulf War; an electric detonator (right); and a length of detonating cord (top).

BRIDGE DEMOLITION

When destroying bridges, SAS teams will place charges in such a way that they will cause the bridge to become unstable. In this way the weight of the bridge itself can be used to bring it crashing down. Diagram A shows how six charges can demolish a concrete cantilever bridge with suspended span. When the charges go off, the cantilever arms adjacent to the suspended arch are cut. In this way the suspended span collapses. Diagram B shows how a filled spandrel bridge is destroyed. Here the charges are much more 'bunched' to blow the whole bridge, rather than cutting sections of it. When tackling continuous span truss bridges (Diagram C), SAS teams will plant charges as shown. The bridge will become unstable when the explosives are detonated, causing it to collapse. A girder arch bridge (Diagram D) can be weakened in a similar fashion. Cutting the steel supports will cause the bridge to become dangerously unstable. Even if it does not collapse, it will not support heavy loads. Suspension bridges (Diagram E) are relatively easy to demolish.


A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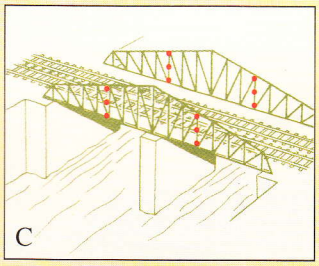
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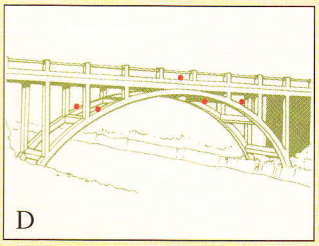
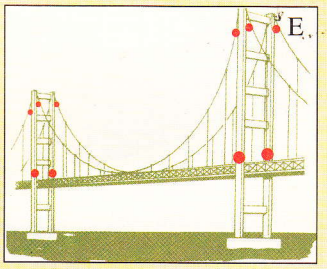

D

The charges are placed on the towers slightly above the roadway, and on the cables near the top of the towers. When they go off, the bridge collapses.


E

An SAS team will not always want to set off the explosives as soon as they are set. Therefore, timers are always carried on missions.

Timers

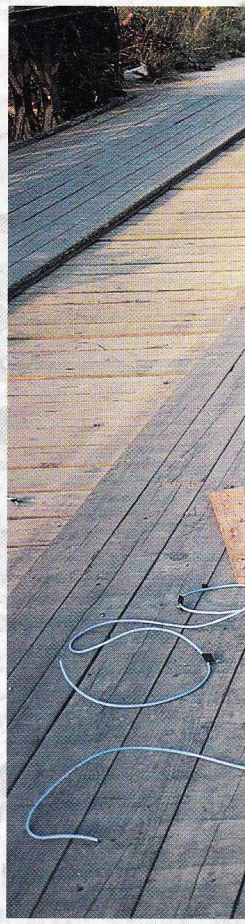
SAS timers used to be of a crude crush delay variety, which were essentially copper tubes filled with acid. Along the tube ran a lead wire. When the tube was crushed, the acid would eat through the lead, which would then release a spring. This in turn would set off a flash compound, which would go off into the detonator, igniting the explosive. The thickness of the lead wire governed the timing of the fuse – anything from 10 seconds to five hours.

The disadvantage with this timer was its inaccuracy and tendency to be affected by the weather. As one SAS veteran described the dangers of setting the 10-second fuse: 'You had to be a bit of a genius with the weather to work out what the temperature was.'

Electronics have now revolutionised timers, which can be set for any time from nine seconds to 99 years. To increase their capabilities and destructive potential, they can also lie dormant, restarting themselves at various times in order to recharge. At any given time, they can be activated by a radio signal, releasing a charge of perhaps no more than 0.3 of a milli-amp, setting off the explosive device.

State-of-the-art timers

The advantage of devices made with this kind of transponder-type timer is that, once placed and hidden, they can lay in wait for years until detonated. Such bombs have been used by the IRA in Northern Ireland. To defend against them and to initiate a premature detonation, British Army patrols have used electronic counter-measures, sending out ahead of them radio signals at various frequencies. The introduction of sophisticated 28-day timers into domestic electrical equipment, such as video recorders, has made



Right: Setting explosive charges on a bridge. Such sabotage can seriously affect enemy troop and material movements. As such, it is part of SAS demolitions training.

access to this kind of advanced technology – and its use in bomb-making – commonplace today.

Having the right tools for the job is one part of successful sabotage. The other is the correct placement of the charges themselves.

Laying charges

In carrying out an act of sabotage, careful planning and a thorough reconnaissance of the target is vital. It is essential that the target is studied and its potential weaknesses identified. The object of any attack is to create the maximum amount of damage with the minimum amount of explosive. This can only be achieved with correct placement of charges.

To achieve maximum effect, a charge of plastic explosive is usually placed in what is known as a '2:1 shape'. This means that on the target the charge is twice as high as it is wide. In this way the shock waves go down into the target. It is the same with the detonator. If it is placed at the end of a flat charge, then a lot of the force of the subsequent explosion will be lost sideways. The most efficient way is to place the detonator on top of the charge so that the shock waves go down into the target, creating the maximum destructive effect.

The need to make the very best use of available explosives is a cornerstone of SAS demolitions training. Since everything of use to the operation must be carried, and the object of a mission of sabotage is to infiltrate, destroy and escape in the fastest possible time, then every kilogram of explosive must be used to maximum effect.

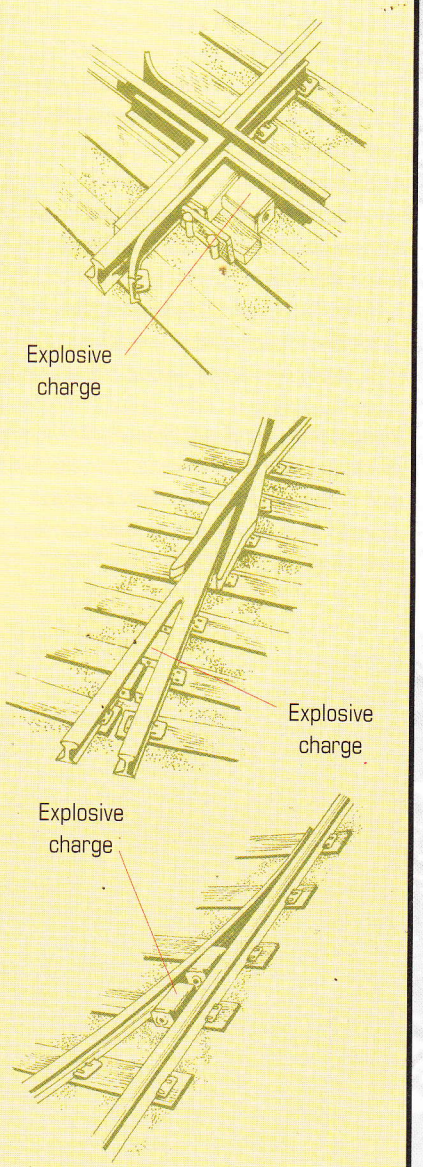
Booby traps

Even abandoned equipment can be put to good use with a small amount of explosive. The booby-trapped kit can be left behind to be found by the enemy. Anyone who touches it will have his hand blown off at least – a good way to slow down a pursuing enemy unit.

The efficient use of explosives has increased a great deal since the 1960s.

RAILWAY DEMOLITION

SAS teams targeting railway lines will, where possible, try to place explosives where they will cause the maximum effect. This means placing them on points and intersections (as shown below). Laying charges on stretches of straight track can be counter-productive, as these sections can be replaced relatively easily. Wrecked points and intersections mean that two lines at least will be temporarily out of action, thus increasing the disruption to the enemy's communications system.



Before then common practice was to use solid charges on objects and destroy them by sheer explosive force. For example, a steel bar 178mm (7in) in diameter, using this method, would need a bulky, solid charge of 6.8kg (15lb) to cut it. Though fail-safe, this was inefficient and a waste of explosive.

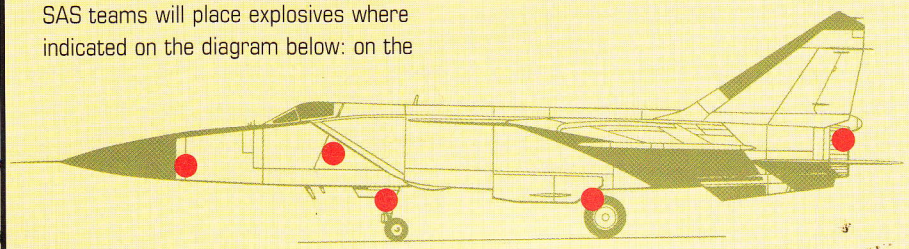
Less is more

The development of more sophisticated demolition methods, pioneered in the United States in the 1960s, taught that less explosive could be made to do the same job. The basis of this new demolition method was the shaped charge. Instead of a solid mass of explosive on the steel bar, the structure and the shape of the bar would be taken into consideration and exploited. Thus, a diamond-shaped charge of only 1.36kg (3lb) had the same explosive effect as a solid mass of explosive five times larger. It was a system of demolition that meant the same effect could be achieved with less explosive. For units such as the SAS it was a godsend. For one thing it meant that foot patrols could carry out more sabotage missions with the same amount of explosives. The Regiment embraced it readily, sending personnel over to the United States to learn the method at first hand.

In choosing the targets for sabotage or demolition, an SAS soldier will always take the practical approach. He will always go for the key points on any target. In attacking the industry of an enemy state, for example, an SAS team would target its electricity supply by

DESTRUCTION OF AIRCRAFT

Modern military aircraft are fearsome fighting machines in the air. But on the ground they are very vulnerable to attack, especially from elite units. They are basically shells stuffed full of sophisticated, and fragile, avionics and machinery. Sabotaging them is therefore very easy. SAS teams will place explosives where indicated on the diagram below: on the nose cones (which contain radar and avionics), undercarriage, air intakes and exhausts. Only a small charge is required to ground the most sophisticated flying machine. Even small-arms fire, as used by the SAS against Argentinian aircraft on Pebble Island in the Falklands, is sufficient to render an aircraft useless.



Right: A wrecked Argentinian Pucara aircraft on the Pebble Island airstrip after the SAS's raid during the Falklands War. Explosive charges have blown off the undercarriage and nose cone.

EYEWITNESS

The Raid on Berka Airfield
March 1942

'We hit the perimeter at about midnight and saw German sentries. As usual, we waited until they had walked by our position and then shot across the road into the trees on the other side. Then we split into two groups. We went for the bombers lying under the cover of the trees. We just walked down the line [of aircraft] lobbing Lewes bombs on to their wings. When the job was finished, Paddy [Mayne] and I sped out of the place. We halted later for a break and the bombers started to go up – it must have been about two hours as we were using time pencils of that duration.'

Sergeant-Major Bob Bennett, L Detachment

destroying power lines and the turbines in power stations. As a method of disrupting the running of any industrial organisation, the targeting of computers and records is also an option, as is the identification and killing of key maintenance personnel.

With their great adaptability, explosives are of enormous use not just in industrial sabotage but also in the field. SAS personnel are trained to blow up roads, bridges and railways and to use explosives to clear jungle and forests to create airstrips. They are also trained to use explosives offensively, setting them in ambushes to trap and kill an enemy.

The Claymore mine

The Claymore mine is a favourite piece of equipment in the offensive role. The Claymore comprises a concave plate, on which is layered plastic explosive and 350 metal balls. Once detonated, by trip wire or electric contact, the balls are blown out, devastating an area up to a range of 100m (328ft).

These sophisticated methods of demolition are taught to members of the Regiment on the Advanced Demolition Course. This is a supplement to the Basic Course which, over an intensive 10-week period, teaches SAS personnel the basic methods and safety procedures related to explosives and incendiary sabotage. Though there is a large written test at the end of the course, the instruction is mostly practical.

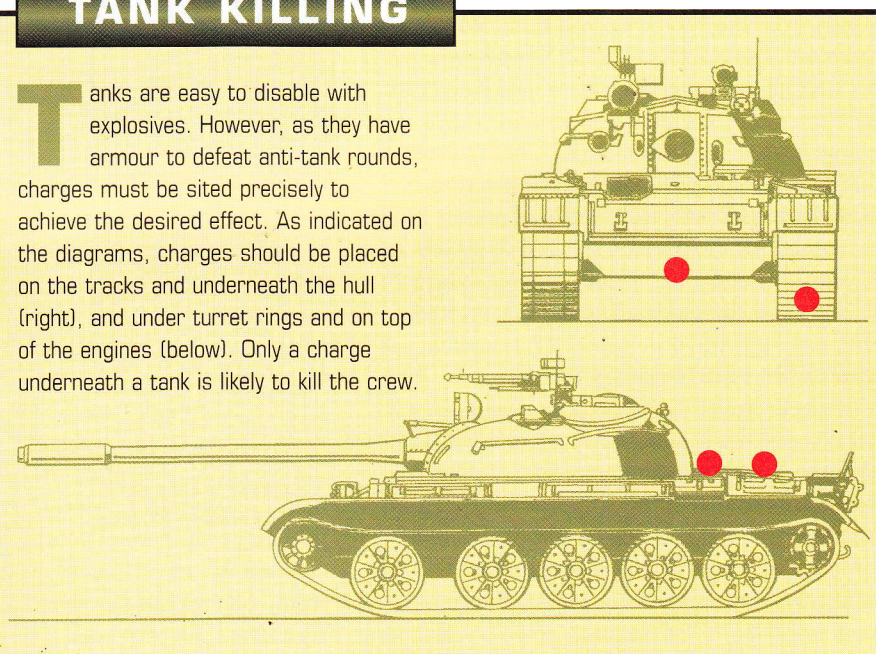
In the past disused factories and power stations throughout Britain have been used to simulate targets. In this way members of the Regiment were given practical experience of planning and executing attacks. To give their training a further degree of reality, a number of working power stations have also been used. These simulated attacks – using dummy explosives, of course – have also helped in planning the defence of these establishments against attack. The Regiment has also gone abroad on these exercises, simulating attacks on industrial facilities in northern Europe. This training also included potential operations against nuclear facilities. During the stand-off of the Cold War, it was part of the West's operational plan to slow down the Warsaw Pact's advance by destroying nuclear power stations. This would create areas of lethal radioactivity.

The multi-skilled SAS soldier

An SAS soldier, fully trained in the methods of demolitions and sabotage, is able to call upon an enormous variety of skills. For the successful sabotage of key enemy sites and structures an SAS man has to be many things. He has to be a structural engineer, able to locate targets. He has to be a mathematician, able to calculate the areas and weights of targets in relation to the force of the explosive employed. He has to be an electrician, capable of rigging circuits and working out the electrical resistance. He must also have nerves of steel, both to handle highly dangerous substances and to plant them on the target. In all, combined with his combat skills, the ability to destroy and disable targets with explosives is a very powerful weapon in the hands of an SAS soldier.

TANK KILLING

Tanks are easy to disable with explosives. However, as they have armour to defeat anti-tank rounds, charges must be sited precisely to achieve the desired effect. As indicated on the diagrams, charges should be placed on the tracks and underneath the hull (right), and under turret rings and on top of the engines (below). Only a charge underneath a tank is likely to kill the crew.



SELECTION: THE FIRST THREE

SAS Selection is the toughest course in the world. It is simple, brutal and takes no prisoners. The drop-out rate is a phenomenal 96 per cent. But the SAS only wants the cream.

To become an SAS soldier an individual has to pass many hurdles. The first, and probably the hardest, is Selection Training. It is held twice a year – once in the summer, once in the winter – on the wind-swept hills of South Wales. And it lasts four weeks (a three-week build-up and Test Week).

The SAS has no system of direct entry, unlike other special forces units in the world. So how do you put yourself forward for four weeks of personal hell? First of all, you have to volunteer yourself for Selection. The decision rests entirely with the individual. The only condition is that the volunteer must have a minimum of three years' service left from the date that, if successful, he passes Selection Training. This being the case, most men who put themselves forward tend to be in their mid-20s, although individuals have been known to pass Selection as young as 18.

The hunt for recruits

Up until the beginning of 1992, only members of the British Army could volunteer for the SAS, but now men from the Navy, Air Force and Royal Marines are also eligible. The SAS is always under strength, and therefore must cast the net wider for recruits. As an SAS instructor states: 'We now have to go out and tell the Army and the rest of the forces what the SAS is all about in order to attract recruits.'

Many men put themselves forward for Selection each year – around 140 on each course is normal – but few make the grade. Why do they do it?

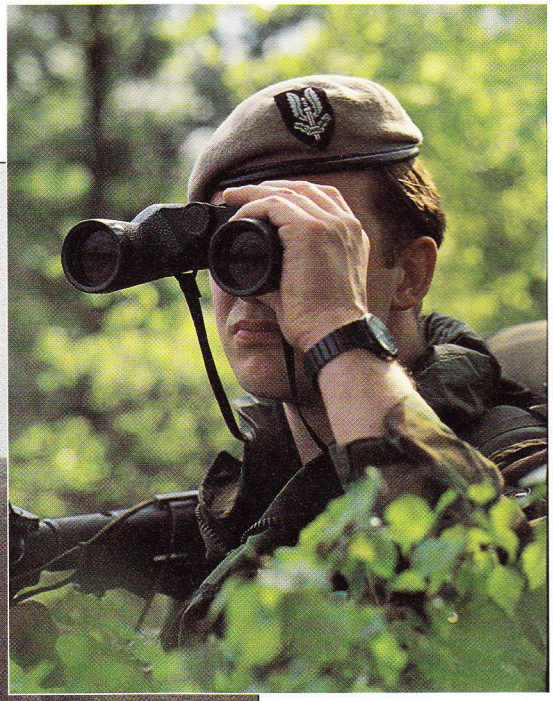
Reasons for volunteering

A desire to be the best, to be a part of what is reckoned to be the best in the world, is what motivates some. Then there are those who think that being an SAS soldier is the ultimate 'buzz', an irresistible mix of excitement and danger.

For those who have decided that the SAS is for them, the first step is to put in for a Defence Council Instruction (DCI) paper, in which the volunteer certifies that he is prepared to be put forward for 'arduous duties', parachuting and so on. Up until the 1980s, other regiments in the British Army took a dim view of the SAS, believing it 'stole' their best recruits. There is some truth in this. A member of SAS Training Wing admitted that the Regiment 'poached the cream', that they were always on the lookout for the 'good 25-year-old corporal'. Therefore, many volunteers had their applications mysteriously delayed, or were refused permission to volunteer. This has now stopped. However, parent units can still deter men from volunteering for Selection, but in a positive way. They can offer men promotion as an inducement to staying – many accept.

Above: Selection is all about keeping going when your feet are bloody and sore and your lungs are red-raw. Only those with supreme willpower will be able to hack it.

WEEKS



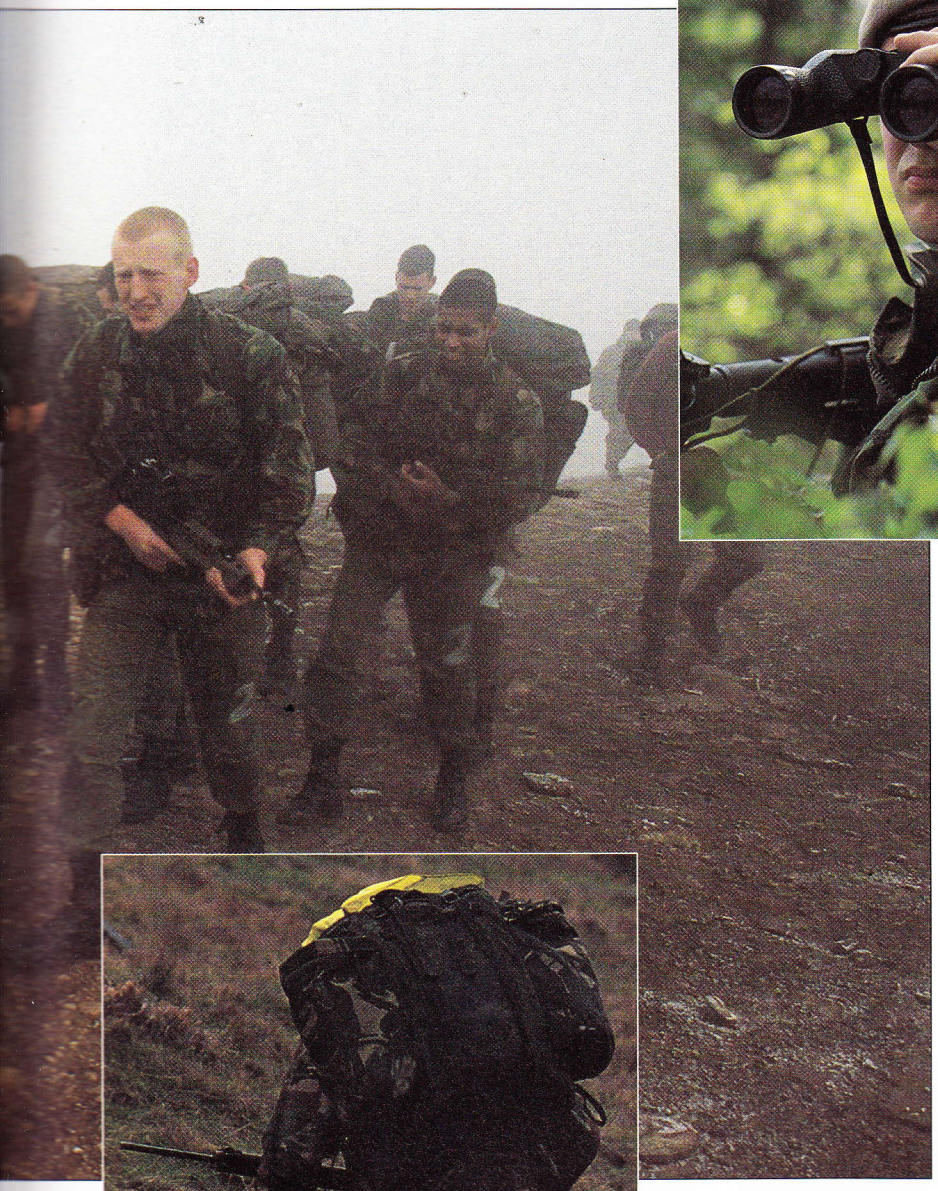
Left: What every man who puts himself forward for Selection wants: the SAS Winged Dagger badge and beige beret. It is the most highly prized item of military headgear in the world bar none. Few get to wear it.

The majority of volunteers – around 70 per cent – come from the Parachute Regiment. Paras are always looking for adventure. They are fit, motivated and aggressive, trained to tackle anything they come up against. For many Paras the SAS is the next logical step.

What the SAS wants

Qualities looked for in recruits include motivation and determination, physical and mental stamina, initiative, self discipline, compatibility for small-group, long-term isolated missions, and the ability to assimilate a wide range of fighting skills. There are two other qualities looked for, though they are not to be found in any Ministry of Defence or SAS handbook. They are a sense of humour and humility. Without these qualities a man will not get through Selection.

There is no way of knowing if a man has these qualities just by looking at him. The instructors know this: 'You can see what's on the outside, but more important is what's within. Only Selection will show what a man's truly made of.'



Left: A soldier in the Brecons struggles up a hillside with a heavy bergen and an SLR. If it rains the bergen will get heavier as the material soaks up the water. And the going will get tougher as the ground becomes wet and slippery.

The start of the course

For those volunteers who turn up at Hereford train station to begin Selection, there is uncertainty. No one knows what to expect. The attitude of the instructors is helpful, though not overly encouraging. The men arrive on a Saturday morning, and are taken straight to Stirling Lines, the SAS's UK base. They are given a medical and then each man must pass the British Army's Battle Fitness Test (this entails covering 2.5km [1.6 miles] in 13 minutes in full kit in a group, then completing the same distance solo in 11.5 minutes). Around 10 per cent fail, and are on their way home immediately.

Once on base the remaining applicants are issued with everything they will need for the next four weeks: boots, bergens (backpacks), webbing,

Above: The men are taken to and from the hills in the four-tonners. In the mornings they try to get some sleep during the journey, but the wind gets in the back and chills them to the bone. This means they are tired before the work on the hills begins.

uniforms and de-activated Self-Loading Rifles (SLRs). Much of the kit is old. This is deliberate. The webbing and bergens soak up any wet, making them heavier. This results in bergen sores and blisters. Ill-fitting boots result in painful foot blisters. All this is designed to test motivation.

The men are then taken to Dering Lines, a battle school based in Brecon. For the next four weeks this will be their home (it was felt that they should only be based at Stirling Lines when they are fully fledged SAS soldiers). The quarters are comfortable, and the food is hot and ample.

The first week

The first Sunday marks the start of the course. This is the beginning of the first week. The exercises the men have to perform over the next four weeks do not change. They consist of timed navigation marches over the Brecon Beacons, with each man having to reach pre-arranged rendezvous (RV) points along his route. The only things that increase are the loads he has to carry, and the distances he has to travel. The routes are set by the training staff, and there are instructors at each RV to check on the progress of each volunteer, as well as to make sure that no one is

Right: Selection is held twice a year: once in the summer, once in the winter. On winter Selection there isn't the searing heat. But there is a risk of hypothermia due to the freezing wind.

Above: A group on SAS Selection in the 1960s. Apart from the Lee-Enfield rifles, very little has changed. Why should it? It is an excellent test of suitability for the SAS.

Below: Each man on Selection has an equal chance. He is given a map, a compass and the grid reference of the first rendezvous (RV). When he gets there he will be told the next RV, and so on. All the time he is being assessed.

breaking the rules. The rules are simple: everyone has the same weight on his back, and everyone has to complete each course in the allotted time.

The men turf out of bed at around 0400 hours, have breakfast, and then it's into the trucks for the journey to the Brecon Beacons. The Beacons are subject to driving rain, sleet and snow, high winds, and they have little natural cover.

SAS 'Sickeners'

When they arrive they are sorted into groups. This is only for organisational purposes. They are really on their own. Each man's bergen is weighed and inspected – no one starts with an unfair advantage. Even at this stage the instructors will have noted those they want to get rid of. In the past they used so-called 'Sickeners' to get rid of men who weren't the right material. These consisted of making volunteers crawl through ditches filled with sheep's entrails, or pulling a Land Rover up the side of a hill with ropes, then letting it roll back down, after which it would have to be hauled up again, and so on. Other 'Sickeners' involved carrying rocks from RV to RV, or having to remove boot laces halfway through a march, which would result in large blisters and swollen feet. The 'Sickener factor' has now gone, but the instructors still get rid of those considered unsuitable as quickly as possible.

Then the groups head for the hills. Though the distances may not seem that great, at least at first – they start at around 10km (6.25 miles) – the men have to travel up and down steep gradients, map-reading all the time to ensure they get to each RV. And they are carrying 18kg (40lb) on their backs, plus their personal weapon – another 4.45kg (10lb) – which has no sling. One who took part in

Left: Para recruits being put through their paces. SAS Selection is different. There are no instructors screaming encouragement, and there are no mates to urge you on. On Selection individuals are on their own.

Below: The marches are all about speed. But keeping up a cracking pace has its own dangers, such as twisting an ankle in an unseen rabbit hole.

a 10km (6.25-mile) speed march remembers the pain: 'The pace of marches is crippling. For me the worst was the 10km speed march with bergen, belt order and weapon. The pain in my legs and hips will always be with me. My whole body was on fire, but I knew I couldn't give in.'

The use of roads is strictly forbidden. They are only allowed to walk along animal tracks and Roman roads. Anyone caught cheating is failed. The marches are made worse by the weather, as one volunteer remembers: 'You can start off in bright sunshine but after an hour or so it will suddenly get cloudy and cold. Then you get to the top of a ridge and the driving rain will tear into you, stinging your eyes and buffeting your body.'

Increasing the pressure

The marches increase in length, up to 20km (12.5 miles) and beyond. And the pressure is on all the time, as an SAS instructor states: 'It's all down to time. The trick is to go flat out to get A grades on the easy marches. If you can march 20km (12.5 miles) in three hours and 20 minutes you get an A grade, if you do it in three hours 30 minutes you get a B grade. The grading is very tight.' Failing one exercise does not necessarily mean failing the course. If a man fails a march because of poor map-reading, he will stay on the course if he achieved A grades in his previous marches.

The culmination of the first week is the High Walk, a 23km (14-mile) hill-walking exercise in the Brecons. Movement is again in groups, but it is individuals who are timed. It has to be completed in four hours and 10 minutes in good weather. If conditions are poor, additional time is allowed to complete the course. Each man carries just over 18kg (40lb) on his body, plus his rifle. He is also given a map with the designated RVs marked on.

GOOD POINTS	BAD POINTS
✔ Selection is a very cost-effective way of sorting out soldiers who have SAS potential, and the abolition of the Sickener factor has shifted the emphasis from discouragement to encouragement.	✘ The hard physical nature of Selection can result in some long-term knee and ankle injuries in individuals, which can damage careers.
✔ Selection is still rated as one of the best initial special forces training courses in the world.	✘ There are only two Selection courses a year, which means the SAS's annual intake of recruits (usually around 12-15) is insufficient to meet the Regiment's manpower requirements.
✔ Volunteers can attempt Selection a number of times (up to half a dozen), giving those who suffer injuries on the course another chance.	✘ Selection is still viewed with suspicion by many units in the British Army, Navy and Air Force.

After a full week of marching on the hills, everyone is tired. Many men's feet are cut to ribbons and are heavily bandaged. Others have large bergen burns on their backs. Tendons and ligaments are aching, and everyone's body is tired.

Nevertheless, from the SAS's point of view the first week is the 'easy bit', and it has got rid of the unsuitable. The 'wasters' (those who just wanted a break from mundane Army life), the 'lambs' (those whose fitness was poor), and the ones who are a 'mouth on a stick' (those who are loud and whose character does not fit the Regiment) will have gone. The committed remain, though even some of these will have quit because of injuries.

Once the High Walk is over, there follows a further two weeks of navigation exercises and physical training. The men are out on the hills during the day and in the classrooms in the evening. Each man is now getting an average of four hours' sleep a night, and the strain is beginning to tell. Tired bodies and minds result in lethargy and irritability. All this is carefully noted by the staff of Training Wing. If a man loses his sense of humour after only two weeks of graft, he is no good to the SAS.

Pushed to the limits

The physical pace is hard, though keeping up mental stamina is just as hard. For example, when individuals reach certain RVs they may be given a foreign weapon to strip and re-assemble. The SAS needs men who can think even when they are physically exhausted. There is no shouting or encouragement from the instructors, just a constant monitoring.

For those who are still left on Selection Training after three weeks, the greatest challenge is yet to come. All that went before was just a build-up, a preparation for the biggest test most of them will face in their lives: the hell of Test Week.

Below: For some it is too much, and they have to be given help. A number of men have died on the hills due to hypothermia or exhaustion. This is a heavy price to pay to keep standards up.

ANDY MCNAB

TEAM LEADER

Andy McNab's life story is the stuff of fiction. A teenage tearaway in south London, he later went on to lead the most famous SAS operation of modern times.

Thanks to his book about his exploits during the 1991 Gulf War – *Bravo Two Zero* – Andy McNab (pseudonym) is now one of the most famous SAS soldiers ever to have worn the Winged Dagger badge. His childhood and early Army career suggested anything other than service in the world's crack unit, but his determination ensured he made the grade.

McNab was born in London in 1960. As a baby his natural mother abandoned him in a plastic bag on the steps of Guy's Hospital. He was adopted by a south London couple, and spent a tough childhood and teenage years in Brixton. He was in and out of trouble with the police during this time and narrowly escaped being sent to borstal for burglary. Determined to stay out of trouble in the future, he decided to join the Army. He went along to the recruiting office and failed the academic test. He was told to report a month later, and this time he passed (due to the fact that the test was exactly the same). He ended up at the Infantry Junior Leaders Battalion in Shorncliffe, Kent. From there he went on to the Rifle Depot in Winchester and the Royal Green Jackets.

First blood

By his own admission he was an average soldier. But he liked the Army. It gave him the discipline he had never known and the promise of excitement. He worked hard and his efforts paid off; he was promoted to lance-corporal by the time of his second tour of Northern Ireland in 1979. During the tour his patrol fought off a heavily armed IRA detachment, an event which made him a hero with his regiment.

He was now, in his own words, 'army barmy'. He loved the adrenalin rush of military life. He attained the

How tough do you have to be to be an SAS soldier? Andy McNab poses with the kit he took with him behind the lines in Iraq. He marched and fought carrying a back-breaking load of 95kg (209lb).

Right: The patrol 'Bravo Two Zero' photographed on the ramp of the Chinook helicopter before their insertion into Iraq during the Gulf War. Patrol members with uncovered faces are those who perished in Iraq. They are, from left to right, Robert Consiglio, 'Legs' Lane and Vince Phillips.

rank of corporal. It was in 1980, while posted to Tidworth, that he first took an interest in the SAS. He was bored with garrison life. So, yearning for more adventure, he put himself forward for SAS Selection. However, he failed and had to return to the Green Jackets. Undeterred, he applied for the next Selection, which was a winter course. In preparation he trained all through Christmas 1984. This time he succeeded. He passed through all the training, and then received his khaki beret and Winged Dagger badge. He was assigned to Air Troop, B Squadron.

Gulf command

By the time the Gulf War broke out in 1991, he was an SAS sergeant. His patrol, codenamed 'Bravo Two Zero' (the North Road Watch patrol), was sent into Iraq to set up observation posts to watch for enemy Scuds. McNab and his seven comrades found themselves right in the middle of an area of high enemy activity. They set up camp, but were discovered by a young boy tending a herd of goats, who alerted the nearby Iraqi unit. It seemed as though they would all be killed. However, their SAS training stood them in good stead.

There was no other alternative but to flee to the Syrian border, the Iraqis in hot pursuit. The weather at the beginning of 1991 in western Iraq was atrocious. Snow, sleet, rain and freezing temperatures lashed the SAS soldiers. With few rations, inadequate clothing and ever-decreasing supplies of ammunition (there were several battles with Iraqi troops), the odds were against them.

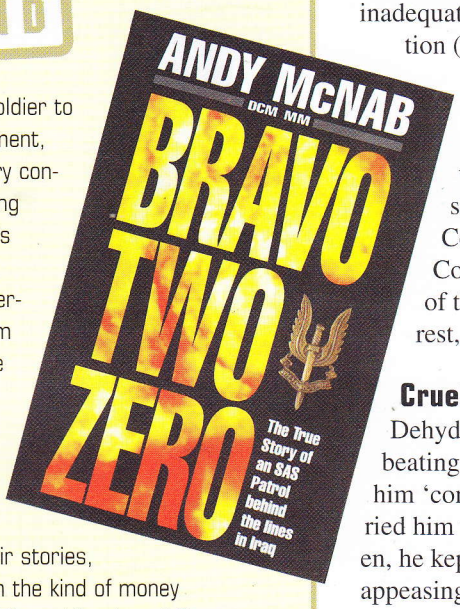
The team was split into small groups by a combination of bad luck and fatigue. The pace was cruel, and very soon it took its toll. Sergeant Vince Phillips got separated and died of hypothermia. Trooper Robert Consiglio was killed by enemy gunfire, while Lance-Corporal 'Legs' Lane also died of hypothermia. Only one of the eight – Corporal Chris Ryan – made it to Syria. The rest, including McNab, were captured.

Cruel capture

Dehydrated, cold and starving, McNab had to endure savage beatings from Iraqi military personnel as they tried to make him 'confess' to being Israeli. However, his SAS training carried him through this ordeal. No matter how badly he was beaten, he kept his mind working. He tried to think up ways of appeasing his interrogators without giving them any information. These sessions dislocated his shoulder, reduced his face to a bloody mess and ruptured several muscles in his back. The Iraqis forced him to eat his own excrement, which gave him hepatitis. But he did not give in.

He was awarded the Military Medal after the war – a just reward for a true SAS hero. He retired from the Regiment in 1993 and wrote *Bravo Two Zero* about his Gulf War experiences. He now lives abroad.

BACKGROUND



Andy McNab is not the first SAS soldier to write about his service in the Regiment, and now there is a booming industry concerning ex-SAS members committing their memoirs to print. This trend is viewed with some alarm by the Regiment itself, which as a unit operates in the shadows, well away from the media spotlight. In addition, the British Ministry of Defence, which is concerned about secrets being made public, is also concerned about ex-SAS soldiers putting pen to paper. Ex-SAS men themselves are naturally keen to tell their stories, such as Soldier 'I', not least to earn the kind of money that McNab himself has amassed. The publication of *Storm Command* and *Looking for Trouble*, both written by General de la Billière, a former SAS soldier himself, has increased the determination of serving and ex-SAS soldiers to get a 'slice of the action' and reveal the true face of the SAS. Chris Ryan, for example, a member of 'Bravo Two Zero', has written his own account of the mission entitled *The One That Got Away*.

MOUNTAIN & ARCTIC WARFARE CADRE

COLD-WEATHER WARRIORS

The soldiers of the Royal Marines' Mountain & Arctic Warfare Cadre are second to none when it comes to fighting in the snow and among the high peaks. They are so good that they train the SAS.

The Mountain & Arctic Warfare Cadre is a small and unique unit of the Royal Marines. It trains and provides mountain leaders (MLs) for 3 Commando Brigade. It also trains members of the SAS, Pathfinder Platoon and the Special Boat Service (SBS) in 'cold weather' warfare. Though

In the frozen wastes of northern Norway, soldiers of the Cadre deploy after making a parachute drop from a Hercules.

UNIT HISTORY

1962:
First deployment of the Royal Marines to Norway to protect NATO's northern flank. The Cliff Assault Wing is formed.

1963:
Cliff Assault Wing renamed Cliff Assault Troop.

1969:
Cliff Assault Troop trains 45 Commando in mountain and arctic warfare.

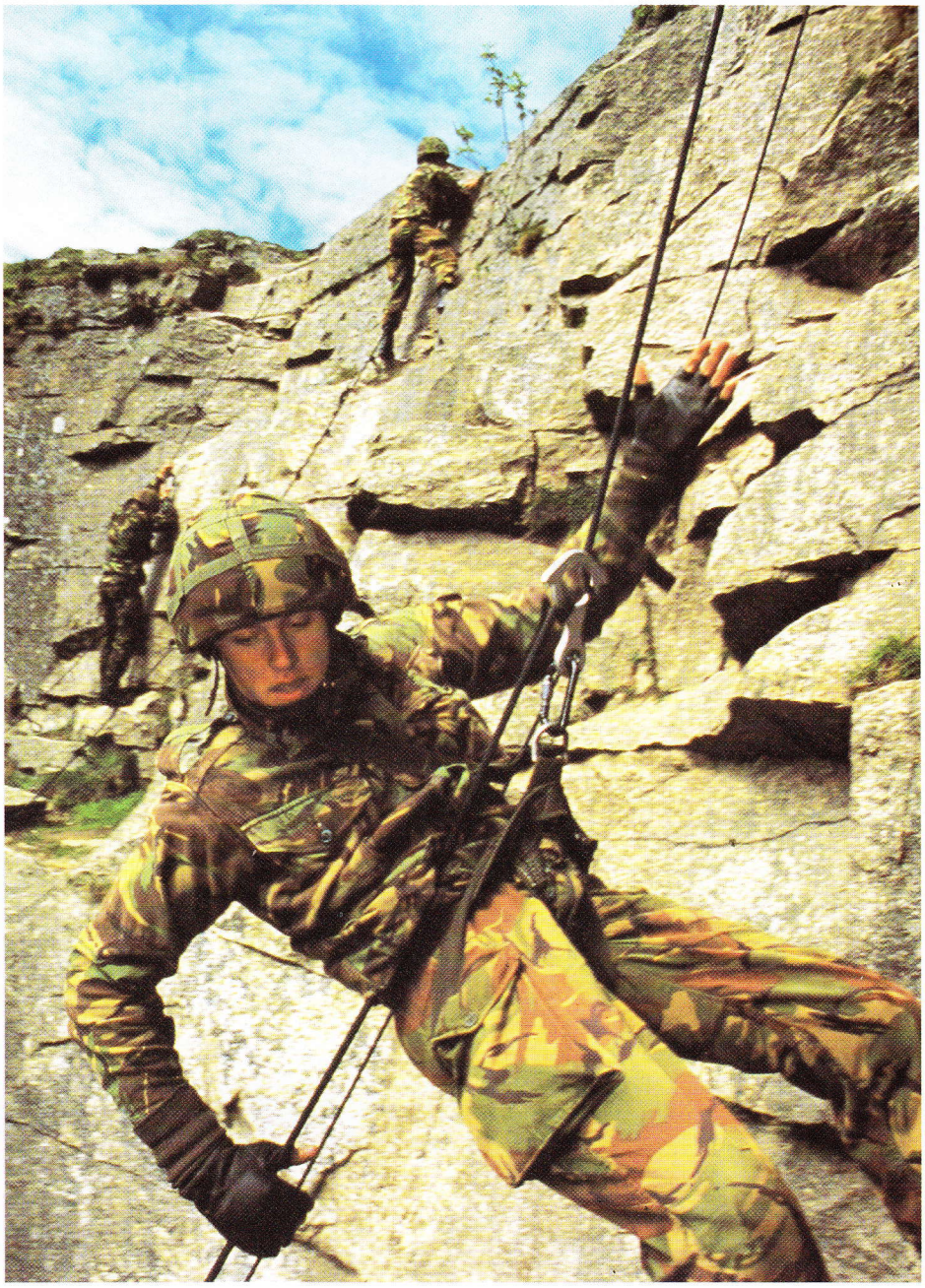
1971:
Cliff Assault Troop redesignated Mountain & Arctic Warfare Cadre

1977:
Cadre trains 42 Commando in mountain and arctic warfare.

1978:
Remainder of 3 Commando Brigade is trained in cold-weather warfare.

1982:
Cadre acts as a reconnaissance and intelligence-gathering unit for 3 Commando Brigade in the Falklands. Wins victory at Top Malo House.

1991:
Cadre sent to northern Iraq to safeguard Kurds as part of Operation 'Safe Haven'.



Above: Members of the Cadre go through their drills on the high peaks. Mountain Leaders are at home among the rocks and on snow and ice. They are both combat troops and trainers.

it is mainly a training unit, it has an operational role to provide long-range reconnaissance for the Brigade commander. It also provides fighting patrols if required.

The Cadre is recruited from the Royal Marines. A potential ML must first have passed a Junior Command Course and been promoted to corporal. Thus most volunteers tend to be in their mid-20s.

Qualities looked for in recruits are maturity and professionalism. If they pass they will be teaching both officers and men, as well as special forces soldiers such as SAS. The right attitude is therefore very important.

Having applied for the course, volunteers will attend an 'acquaint' to see if they have the right skills for the course. For many this is a formality: they are already good climbers serving with their unit's reconnaissance section.

The selection course

The selection course itself lasts 10 months, and consists of climbing, skiing, mountain training and combat survival. It is tough to say the least. It is run by ML2s who have passed their Senior Command Course (SCC) and are being uprated to ML1s.

The course assembles at Stonehouse Barracks, Plymouth, the headquarters of 3 Commando Brigade. Then the students are taken to Cornwall, near Land's End, where the serious stuff starts. The course usually starts in the second week in September each year. Numbers vary, but it is mostly between 25 and 45, depending on the number of special forces visitors (including SAS).

TOP MALO HOUSE

Above: The faces of victory. Royal Marines in the Falklands following the surrender of the Argentinian garrison. The Cadre fought superbly during the conflict, especially at Top Malo House.

Above: On the way to Stanley: Royal Marines hitch a lift on East Falkland. The members of the Cadre who assaulted Top Malo were transported by helicopter.

Below: Typical Falklands terrain.

During the Falklands War in 1982, the Mountain & Arctic Warfare Cadre was part of 3 Commando Brigade, which had been landed at San Carlos and was ordered to move on the capital, Stanley. On 31 May, a Cadre patrol spotted an enemy force at a place called Top Malo, a farmhouse northwest of Bluff Cove.

The presence of the enemy was relayed to the Cadre's commander, Captain Rod Boswell. Boswell was a 'soldier's soldier'. Extremely fit, he had no time for red tape or formality. His first reaction was to order an air strike. However, all available Harriers were tied up providing air cover for other units. The Argentinians would have to be dealt with another way.

His force, a 12-man assault group and a seven-man fire section, deployed for the attack. The fire group was armed with L42 sniper rifles, M16s and the Light Anti-tank Weapons (LAWs). Boswell gave the order to fire. The anti-tank rounds tore great holes in the walls.

By the time of the third salvo the enemy had started to return fire. Two Marines were hit. Boswell decided it was time to launch his own attack.

The assault group charged straight at the house, the men of the Cadre firing from the hip. Boswell shot the Argentinian second-in-command as his men stormed the farmhouse and forced the enemy to surrender. The Marines had won a victory through firepower and sheer guts.

At the start the instructors try to weed out those who are unsuitable. This involves a period of free climbing (without ropes) at night and intensive physical exercises. Each day begins at 0500 hours with an 11km (seven-mile) run. There is then an hour's break before the day's climbing begins. In October the course moves to Wales, where the standard of climbing is upgraded further.

Combat survival

Then there is a complete change when the students face a combat survival exercise on the Isle of Islay, off the west coast of Scotland, which includes a resistance-to-interrogation phase. The students parachute onto the island and are immediately 'captured'. They are then relieved of their bergens and anything else that might be of use to them. Those with initiative will have already hidden survival aids in their clothing. Thus fishing lines will have been woven into the seams of trousers, fish hooks in epaulettes and snares in shoes.

Living off the land

It is easy to dismiss the importance of hiding such kit. However, the island is full of wildlife and having snares and hooks means not going hungry.

One who had to fend for himself states: 'Left with just a bare minimum of survival aids, the three of us were given an old set of combats and were allowed to keep our boots, underwear, shirt and jumper. Then we were driven blindfolded and dumped in an open stretch of terrain, knowing that we were also being hunted by "the enemy".

'Having built a shelter and set snares, we managed to feed ourselves. However, after three days, as in most survival situations, the stomach shrinks. Although you feel hungry it's not easy to eat a large meal. As a result you get fatigued and start making mistakes. As a result you get "captured" within days.'

Training in Norway

After the Isle of Islay, the students prepare for Norway, which means learning snow and ice techniques. This is the easy bit. Next comes Norway.

In Norway the men undertake long-range ski patrols, another resistance-to-interrogation and a final escape-and-evasion exercise. The latter involves travelling over 300km (187 miles) of snow and ice. They must ski at night, find caches of food that have been hidden, meet with agents and evade capture.

Back in the United Kingdom, the course then involves a final phase of climbing on Ben Nevis. Each student follows a precarious route on the mountain. His safety drills must be perfect, otherwise he could fall to his death. The passing of this test means the students have passed the course. Those from the special forces, such as the SAS, return to their units. The failure rate is less than 10 per cent, though some will have been forced to retire due to injuries.

Training foreign elites

As well as the SAS and SBS, the Cadre also teaches foreign military personnel. These include members of the Australian SAS, Dutch SBS and American elite units. As well as teaching, the Cadre also takes part in a three-month period of extensive arctic warfare training each year with the SAS and SBS to make sure its skills are up to scratch.

Expansion for the Cadre

In 1993, as a result of the collapse of the Warsaw Pact and the need for rapid reaction, the Cadre underwent a change. A new unit, called the Brigade Patrol Troop (BPT), was formed. Its members are trained in parachuting, survival, climbing and communications. In this way they can undertake deep reconnaissance, while the Cadre can concentrate purely on training.

The BPT holds regular selection courses for volunteers, who are drawn from Commando units within the Brigade. Those who pass provide a core of qualified personnel ready to deploy anywhere in the world at a moment's notice and act as the Brigade's spearhead.

Above: Men of the Cadre photographed in their natural habitat – with heavy bergens on their backs and fighting through snow and ice.

THE BIRTH OF THE SAS

A DARING IDEA BECOMES REALITY

The world's most famous elite unit owes its existence to the determination of a young Scottish officer who wouldn't take no for an answer, and to a freak parachute accident.

The Special Air Service came about by accident, a parachute accident to be precise. As the young David Stirling lay in a hospital bed recovering from the back injury he had received from the jump, he put down on paper the ideas that had been forming in his mind for some time about a new crack unit.

Stirling himself came from an ancient Scottish family. He therefore enlisted as an officer in the Scots Guards at the outbreak of World War II. However, life was boring as a second lieutenant in the Guards, so he volunteered for one of the new Commando units that were being formed at that time. He joined No 8 Commando, which was recruited from the Guards regiments and led by Captain Robert Laycock.

No 8 Commando, plus two other Commandos, were amalgamated to form Layforce (after Laycock, who had been promoted to brigadier). It was then sent to the Middle East in 1941 and assigned to General Wavell's Middle Eastern Army. It was ordered to seize the island of Rhodes as a way of cashing in on the success of Major-General O'Connor's North African offensive against the Italian Tenth Army (December 1940 to February 1941). However, when the 2000-strong Layforce arrived in the Suez Canal zone events had overtaken it. The Germans had decided to reinforce their Italian allies and had sent units to North Africa. They were led by General Erwin Rommel. The famed commander and his *Afrika Korps* pushed the British back towards the Egyptian border.

It was a frustrating time for Layforce. Short of manpower and equipment, it was used only for small operations. Parts of it fought in Crete following the German invasion of the Balkans, while others fought the Vichy French in Syria.

Right: General Neil Ritchie, who Stirling handed his notes to before being thrown off base. To his credit Ritchie passed them on to his boss.

Below: David Stirling. His experiences of the large-scale Commando raids in North Africa convinced him that small teams were best.

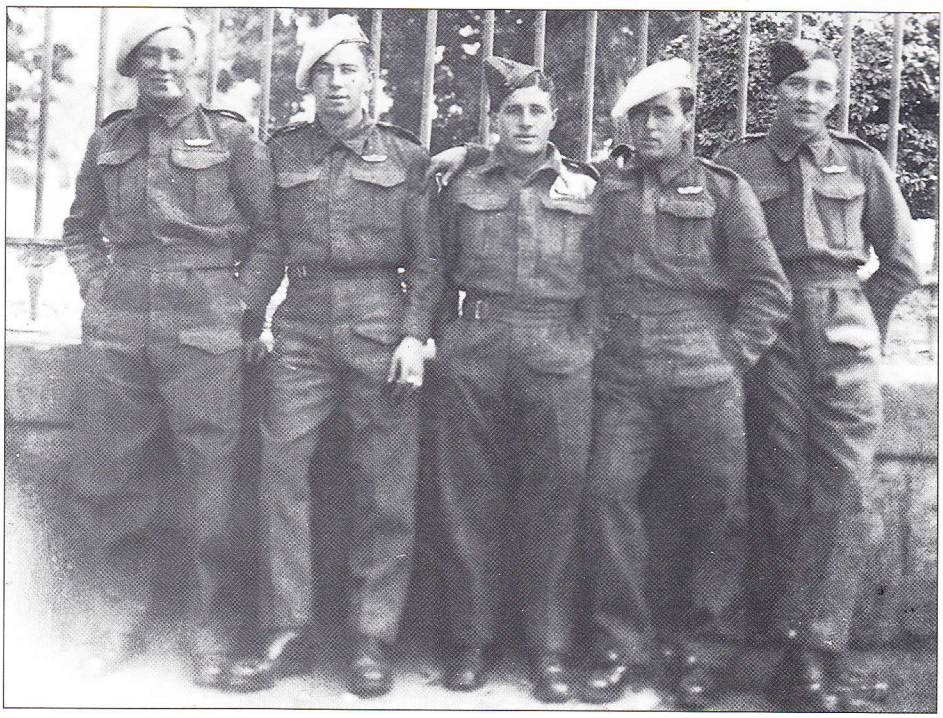
No 8 Commando itself, including the 24-year-old David Stirling, took part in a number of ineffectual raids along the North African coast. Three large-scale operations were launched, but only one was successful. Stirling saw that they were a waste of time and resources. The Royal Navy had to transport the men to the targets, but the ships were either spotted by Axis aircraft or beaten by the sea.

An idea takes shape

Stirling believed that it would be better if a large number of small groups hit the enemy at different spots at the same time. If some didn't make it, no matter; others would get through and succeed. These ideas remained in his head until his parachute accident. In hospital he scribbled them down on paper and decided to take them to the Commander-in-Chief Middle East himself.

At this time Layforce had virtually been disbanded. There was no special raiding force available to the British, so Stirling believed that he at least could get a hearing. Just to make sure he decided to present his ideas personally.

At this time Rommel was at the Egyptian border, but his supply lines stretched back hundreds of kilometres along the North African coast. Stirling wanted to attack them with 200 men, split into five-man teams. They would arrive at their targets by land, sea or air, thus increasing the element of surprise.



Above: An early shot of SAS soldiers in Cairo. Note the white berets, which were laughed at by other Allied troops. This resulted in a lot of fights breaking out in bars and on the streets.

The SAS is born

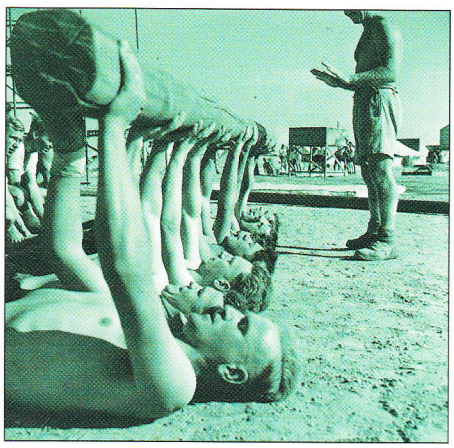
Believing that he had a good idea, Stirling went to see General Sir Claude Auchinleck, Commander-in-Chief Middle East. Bluffing past the guards at headquarters, he hobbled on crutches into the office of Auchinleck's chief of staff, General Neil Ritchie. Stirling managed to give the surprised Ritchie his notes before the guards arrived. Ritchie, to his credit, promised to pass them on to Auchinleck himself.

A few days later Stirling had another meeting with Ritchie, at which he was told that he had been promoted to captain. He was also given permission to raise his new unit. It was to be called L Detachment, Special Air Service Brigade, and was formed in July 1941. It was called a brigade because HQ Middle East wanted to convince the Germans that a new airborne brigade had been formed. In fact, Stirling's unit numbered only 67 men.

The initial task was to find recruits. His first two were officers, 'Jock' Lewes and Paddy Mayne. Others followed, mainly from members of the Guards Commando who were camped at Genefa on the Great Bitter Lake. L Detachment's base was at Kabrit, near the Suez Canal.

Left: SAS soldiers at Kabrit stripping and assembling enemy weapons. From the beginning Stirling wanted his men to be able to fire captured enemy weapons. A good idea for men operating behind enemy lines.

Below: The men are put through their paces at Kabrit. SAS soldiers in North Africa had to be physically tough to survive the searing heat and be able to walk great distances.



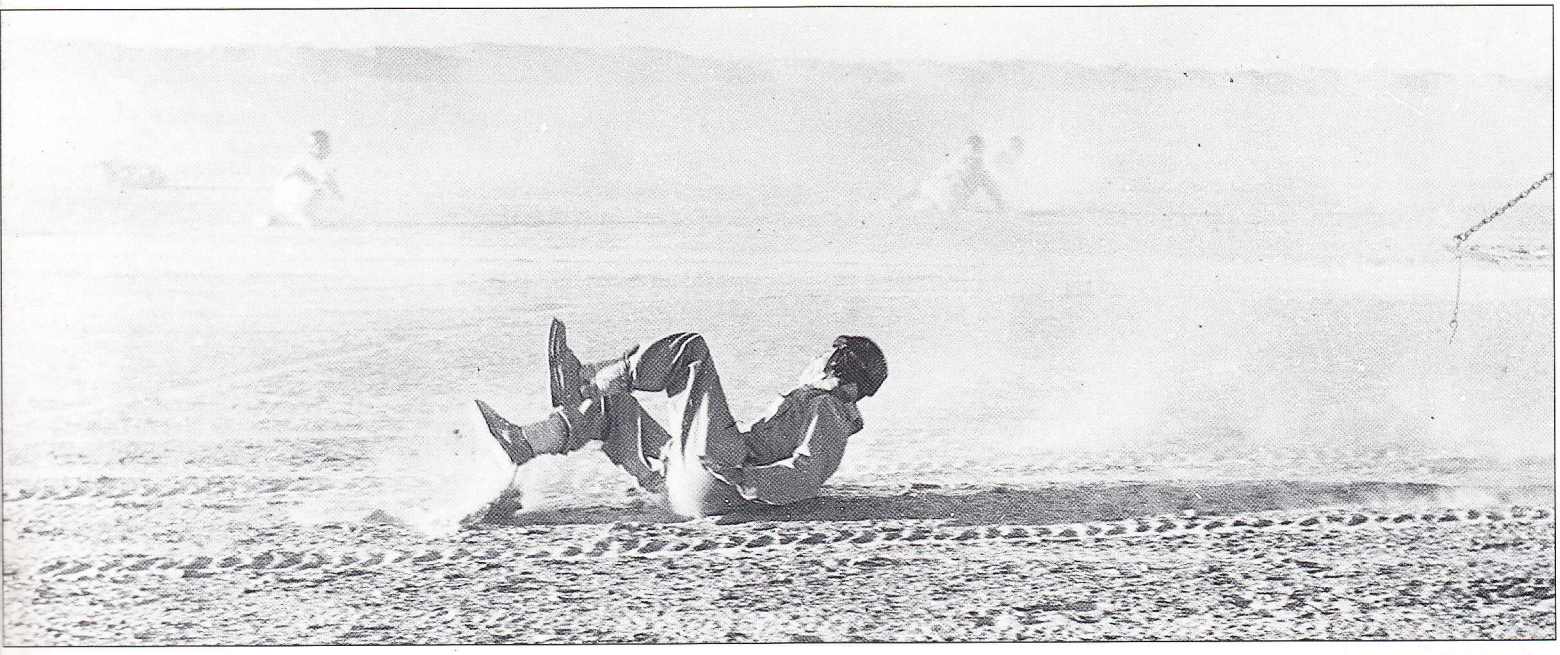
Training started in July 1941, with Lewes in charge. His programme included parachuting, physical exercises, night marches, map reading and route marches. It had only one aim: to enable the men to operate independently in small groups, or even alone behind the lines. This meant being able to navigate across featureless terrain, to observe strict water and ration discipline, as well as hitting enemy targets with explosives. Lewes himself invented the Lewes Bomb to blow up enemy aircraft.

Dummy run

Discipline within L Detachment was strict and the timetable punishing. By November 1941 Stirling believed his men were ready for action. L Detachment had a badge – a Winged Dagger, created by Sergeant Bob Tait – and a motto. 'Who Dares Wins' was invented by Stirling himself.

He decided to mount an exercise, a dummy attack on an RAF airfield at Heliopolis, 160km (100 miles) from Kabrit. The trip to the target was on foot. Rations consisted of a few pounds of dates, glucose sweets and water bottles each. During the day the men rested and camouflaged themselves. On the fourth night they arrived at the target and planted labels marked 'bomb' on the aircraft. Then they disappeared into the night. It had been a success. For L Detachment, the next trip out would be for real.

Above: Parachute training at Kabrit. Stirling believed it was important that his men should be able to get to their targets by land, sea or air to maximise the element of surprise and to give greater flexibility.



Below: 'Jock' Lewes hit upon the idea of simulating parachute landings by rolling off the back of moving trucks. When it was tried the sick bay began to fill up with men with broken ankles! The programme was stopped.

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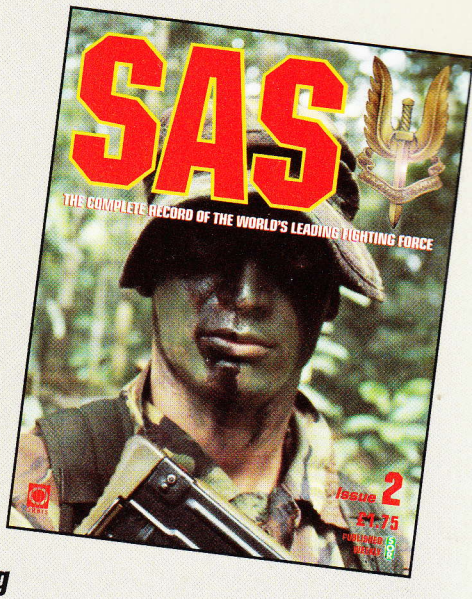

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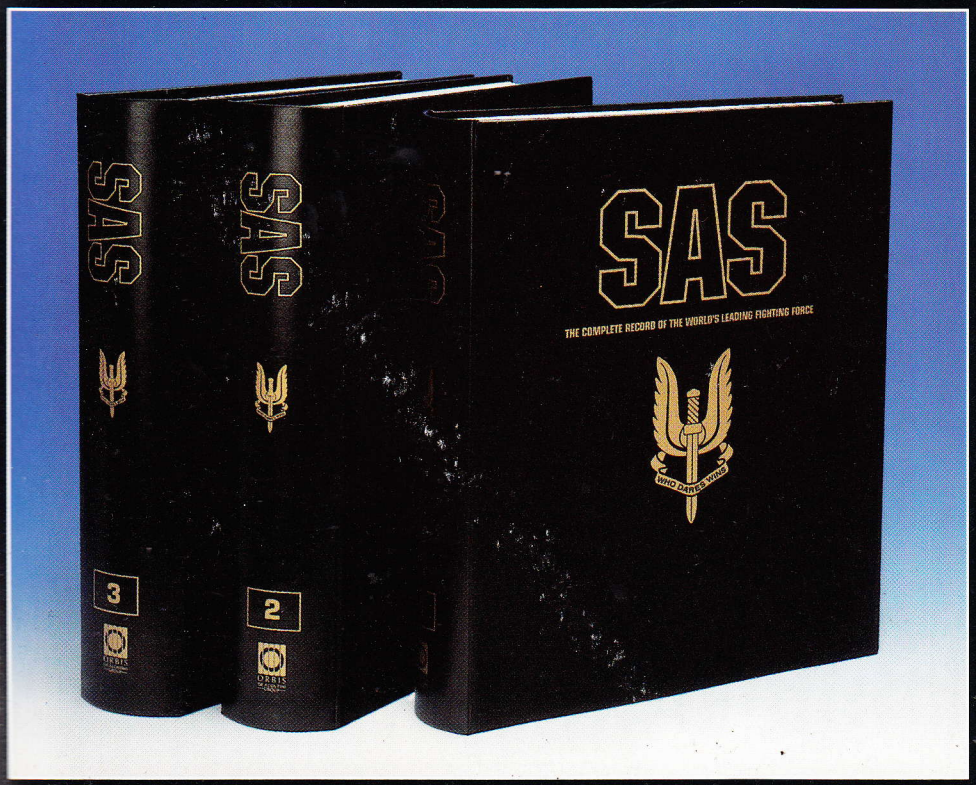

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Royal Marines Mountain & Arctic Warfare Cadre

The globe and laurel cap badge of the Royal Marines, as worn by the men of the Mountain & Arctic Warfare Cadre. King George IV granted the globe to the Marines Corps in 1827, while the laurels were awarded for the capture of Belle-Ile in 1761. Within the Corps the cap badge itself is nicknamed the 'Globe & Bustard'.

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